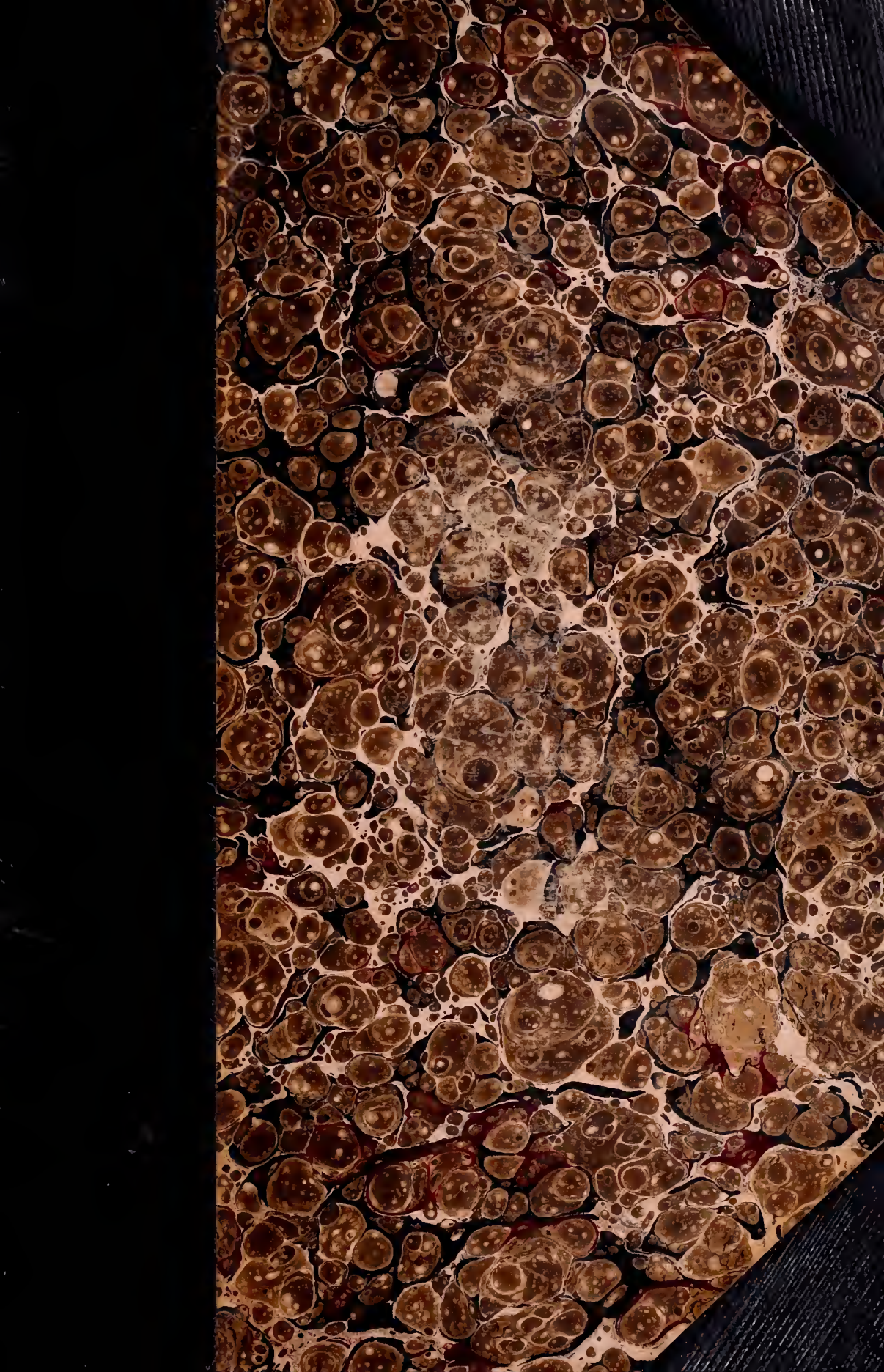


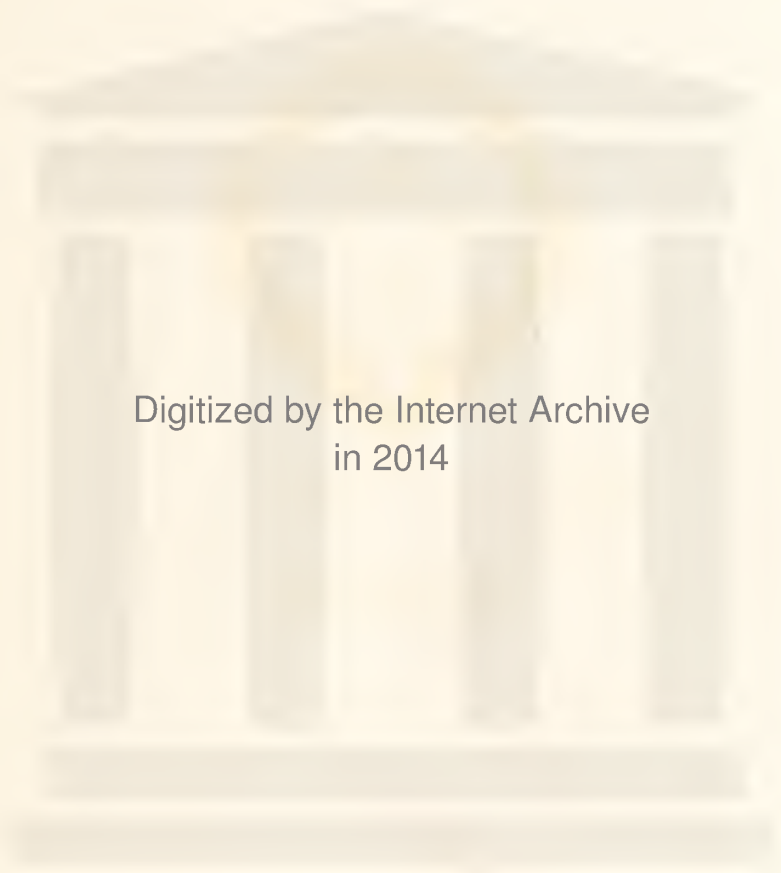


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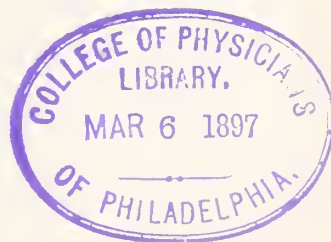
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GAILLARD'S MEDICAL JOURNAL.

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NEW YORK, JULY, 1896.

No. 1.

ORIGINAL ARTICLES.

ON THE PROPHYLACTIC VALUE OF AN ABDOMINAL BELT AFTER COELIOTOMIES.

BY STUART MCGUIRE, M.D., of Richmond, Va.

Professor of Principles of Surgery, University College of Medicine.

Richmond Academy of Medicine and Surgery, April 14, 1896.

During the last five years I have had charge of the after-treatment of nearly three hundred cases of abdominal section. On leaving bed, each case has been fitted with an abdominal belt and instructed to wear it for a year; and, though ventral hernia has been rare, I have become convinced that the integrity of the abdominal walls was due, rather to accurate suturing and to prolonged confinement in a recumbent posture than to any virtue of the artificial support. This opinion was so at variance with my preconceived ideas on the subject, that I determined to write to some of the leading surgeons and gynecologists of the country to ascertain their practice. The following is an abstract of answers received:—

Dr. John Ashlurst, Jr., of Philadelphia, said that he did not invariably use an abdominal belt after coeliotomy, but that he thought, upon the whole, it was a useful precaution to employ.

Dr. W. T. Bull, of New York, said he employed an abdominal belt after abdominal sections, for at least a year, when the wound healed by primary union; indefinitely, if it healed by granulation. He was convinced of its value in preventing hernia, although the condition might develop in spite of its use; that it was the only safeguard we had, and failure to use it might in large wounds lead to voluminous and disabling protrusions.

Dr. David W. Cheever, of Boston, said he used an abdominal belt

with a pad, over the incision, after suprapubic operations, and that he saw no reason to doubt its value as a prophylactic against hernia.

Dr. P. S. Connor, of Cincinnati, said he used an abdominal belt, but he thought it of very doubtful value.

Dr. W. H. Carmalt, of New Haven, said he used an abdominal belt after laparotomies, and that he would continue to do so until some reliable surgeon or gynecologist told him that he had dispensed with it and found it unnecessary.

Dr. John B. Deaver, of Philadelphia, said he used an abdominal belt, and was convinced of its value.

Dr. W. E. B. Davis, of Birmingham, said he used an abdominal belt in deference to the practice of others, but that he had no positive conviction of its value.

Dr. A. G. Gerster, of New York, said that he used the abdominal belt only where the wound healed by granulation, and that he thought it of conditional value in retarding hernia.

Dr. J. McFadden Gaston, of Atlanta, said he used an abdominal belt with a large compress, after all sections for abdominal tumors, to restore pressure upon the viscera, and that it could not be dispensed with for a month after such operation, without incurring risk of hernia.

Dr. J. B. S. Holmes, of Atlanta, said he had abandoned the use of the abdominal belt, and that he had never realized any benefit from its employment.

Dr. Wm. S. Halstead, of Baltimore, said he never used an abdominal belt, and did not believe it was of any value.

Dr. Howard A. Kelley, of Baltimore, said he used an abdominal belt only in exceptional cases, and then for comfort. It was of no value as a preventive of hernia.

Dr. W. W. Keen, of Philadelphia, said he used an abdominal belt after coeliotomies, and was convinced of its value.

Dr. L. C. Lane, of San Francisco, said he used an abdominal belt, and was confident it retarded the development of hernia.

Dr. Claudius H. Mastin, of Mobile, said he did not use the abdominal belt, nor did he think possible that it could prevent hernia: that he closed the wound with three layers of buried catgut sutures, sealing it with iodoform collodion, and never took the dressing off unless indications arose, until it was perfectly healed. That he had had but one case of hernia in his practice, and that occurred where a glass drainage tube had been inserted: and that he believed, in this case, the accident could have been prevented by care.

Dr. Chas. McBurney, of New York, said he generally advised the use of a well-fitting abdominal belt after an abdominal section, and that if the belt fitted perfectly every part of the abdominal walls, he

thought it useful. Otherwise, in making uneven support, it did positive harm.

Dr. H. H. Mudd, of St. Louis, said that he very rarely used an abdominal belt, and that he did not believe it was of any value in preventing the occurrence of hernia.

Dr. J. Ewing Mears, of Philadelphia, said he advised the use of an abdominal belt for a period of from three to six months after a section, and that he was convinced of its value.

Dr. Thos. G. Morton, of Philadelphia, said he occasionally used an abdominal belt, especially in the obese, and that it seemed to be of no value in some unusual cases.

Dr. E. M. Moore, of Rochester, said he never used an abdominal belt and he thought it had no value.

Dr. J. B. Murphy, of Chicago, said he did not use an abdominal belt after any coeliotomy, as he was convinced it was of no value in preventing hernia.

Dr. Henry O. Marcy, of Boston, said he had not for the past ten years used an abdominal belt after coeliotomy; that in three hundred cases where he had closed the wound with tendon sutures and sealed with collodion, he had had but two hernias,—one from suppuration, and one from general pouching of aponeurosis between the separated recti.

Dr. Chas. B. Naurede, of Ann Arbor, said that he used an abdominal belt after all coeliotomies, as he believed it prevents hernia by lessening the effect of sudden or violent efforts.

Dr. T. F. Prewitt, of St. Louis, said he used an abdominal belt after coeliotomies, and he thought it of service.

Dr. L. S. Pilcher, of Brooklyn, said he advised the use of an abdominal belt for from six to nine months after an operation, and he was convinced of its value.

Dr. Joseph Price, of Philadelphia, said he never used an abdominal belt, as he was convinced it was of no use in preventing hernia.

Dr. John H. Packard, of Philadelphia, said he did not use an abdominal belt after removal of the primary dressings, except in some cases for its moral effect; and that he believed it was of value only when the wound was very extensive, or when the walls were very lax.

Dr. Roswell Park, of Buffalo, said he very rarely used an abdominal belt, and that it was only of value in very fat patients.

Dr. John B. Roberts, of Philadelphia, said he usually, but not always, employed an abdominal belt; that he had no absolute assurance of its value, but liked it in cases of pendulous abdomen.

Dr. L. A. Stimson, of New York, said he rarely used an abdominal belt after coeliotomies, but was convinced it was of value in some cases.

Dr. N. Senn, of Chicago, said he invariably directed the use of a proper abdominal support after every abdominal section, and insisted on the patient wearing it from six months to a year, as he believed the bandage useful in preventing ventral hernia.

Dr. W. S. Tremaine, of Buffalo, said he used a belt after coeliotomies, and was convinced of its value.

Dr. L. M. Tiffany, of Baltimore, said he used a belt after coeliotomies, and was convinced of its value.

Dr. A. Vander Veer, of Albany, said he used a belt after coeliotomies for comfort, but did not think it tended to prevent the formation of hernia.

Dr. R. F. Weir, of New York, said he did not use a belt when the wound had been closed by suturing and healed by primary union; but usually employed it when the wound had not been sutured, and healed by granulation. As a preventive of hernia, he thought it of doubtful value, but useful as a placebo.

Dr. J. C. Warren, of Boston, said he used the belt after coeliotomies, as he thought it had some influence in preventing distension of the cicatrix after unusual exercise.

It will be seen that the majority of the writers employ an abdominal belt after coeliotomies,—some from conviction, some from doubt, and some from indifference. The fact, however, that a single competent observer has discarded its use and found no reason to regret abandoning artificial support, proves that in the large majority of cases, it is unnecessary. Because an abdominal belt is indicated in some instances is no reason why it should be employed in all cases. Routine practice is bad practice.

I protest against the use of the belt, not only because of expense, which to some is of considerable importance, but also because of the irritation, annoyance, etc.; and I believe it will follow the obstetrical binder, being as unnecessary.

DISCUSSION.

Dr. Aaron Jeffery had for a number of years discarded the obstetric binder, but in the more recent years, had returned to its use for the comfort of the patient, if nothing more. He agreed with Dr. McGuire concerning the use of the abdominal belt after laparotomies.

Dr. Wm. S. Gordon remarked that sometimes syncope results from the shock of suddenly relieved pressure, as in dropsy. Where the abdominal walls are released, a binder should be used, but properly applied. Mechanical stimulus is a powerful excitant of muscular tissue, keeping up its tone. For this purpose, the binder should be employed.

Dr. Ed. McGuire said the application of a support after laparotomy, depends upon the woman. If the belly is large so that the bandage fits snugly it does good. If flat, where it cannot be applied properly, it is of no use. He does not believe in the binder for obstetrical purposes. It should be sufficient merely to support,—not compress. The latter action tends to join the uterus in the pelvis, and displacements often, in consequence, result. A number of nurses have a reputation of preserving comeliness, but this is accomplished at the expense of involution which is retarded as the resultant of congestion. The binder should be used only to make the patient comfortable; tighter than this, does harm. He believes the support is useless in post partum hemorrhage. It is of importance not to keep the woman on the flat of the back, but to let her turn from side to side.

Dr. Stuart McGuire, in closing the discussion, said he brought in the question of the obstetrical binder to give rise to discussion. Regarding the support after coeliotomy, the points to impress are, thoroughness of suturing and length of time in bed. No matter how speedy the convalescence, the patient should be kept in bed from four to six weeks. The belt gives a false sense of obscurity, should be used only on fat women, and, here, for comfort.

Mark W. Peyser, M.D.,
Secretary and Reporter.

—:O:—

TRANSLATION.

CHEST WOUNDS CAUSED BY SMALL PROJECTILES.

Translated for Gaillard's Medical Journal.

By H. McS. GAMBLE, Ph. D., M.D.,

Moorefield, W. Va.

Gentlemen, I will take advantage of the presence in our wards of a young man twenty-one years old who has just attempted suicide by firing a revolver into his chest, to call your attention to a question of everyday practice: the diagnosis and treatment of penetrating wounds of the chest by balls of small calibre. The following, in a few words, is the history of this patient. On the 24th of November, at seven o'clock in the evening, after a discussion with his parents, he resolved to put an end to his life, and to accomplish this object, he laid down upon his bed and applied the muzzle of his revolver to the right side of his chest; the weapon held in the right hand, being consequently directed from before backward, from above downwards and a little from within outwards at the moment the shot was fired. According to the statement of the patient, the calibre of the revolver was nine millimetres.

The patient did not lose consciousness, which is quite rare. Besides, he did not suffer acute pain. But we should note two symptoms which he has presented, both possessing great diagnostic value. Almost immediately after the shot, he experienced a sensation of suffocation, accompanied by difficulty of respiration, and an hour later he spat up red blood, by a sort of expectoration without any real cough.

Towards nine o'clock in the evening, that is to say about two hours after the accident, the wounded man was brought to the hospital, and the interne on duty proceeded immediately to occlusion of the wound with iodoformed collodion and the bandage. I could not too highly commend this conduct, for in practising immediate occlusion of the wound, the patient was placed under protection against a possible infection. At the moment of his admission into our wards, the intensity of the dyspnoea and the pain throughout the entire chest, prevented the patient from making the slightest movement. The hemoptysis was more abundant than in the morning, and the night, very much agitated, was passed without sleep.

The next morning (Nov. 25th), at the hour of visit, I proceeded to make an examination which enabled me to form an exact diagnosis and to collate the elements of the prognosis. At the level of the third right intercostal space, 3 or 4 centimetres beyond the border of the sternum, is seen the orifice of entrance of the ball. It is a small rounded wound, with blackened edges, burnt by the powder, but so to speak adherent and without tendency to separation. Around the wound, the skin was intact. The local lesion then appeared extremely insignificant. Upon exploring the whole circumference of the thorax and naturally the regions opposite to that in which was located the wound of entrance of the projectile, I failed to discover any orifice of exit. Palpation, made upon the same points, did not permit me to discover the projectile under the skin or in the body of the muscles, as frequently happens. There existed besides no trace of sub-cutaneous emphysema.

The patient complained at all times of suffering upon the least movement and above all in the moments of respiration.

His voice was not altered, nor panting, but he experienced a pretty severe dyspnoea which however did not extend so far as to orthopnoea.

The hemoptyses continued, but a little modified in its features. There were blackish, hemoptoic expectorations, as if formed of clots mixed with mucus.

Exploration of the thorax in this man, loaded with fat, was not an easy matter. It did not seem however that the right side of the chest was more dilated than the opposite side. Upon percussion, some dullness was found from above downwards over the whole right side. Auscultation, finally, revealed signs indicating the presence in the

pleural cavity of an effusion of air and fluid. In the upper two thirds, in fact, amphoric breathing is heard, and the vibration of the voice is transmitted with the same amphoric timbre. In the lower third, on the contrary, there is complete silence. The thoracic vibrations are diminished in the entire right side. I will add, in order to close the exposition of this examination, that the patient is apyretic.

Under the conditions in which we find ourselves placed in the presence of this patient, the diagnosis comprises three important points. Is the wound penetrating? If so, what are the intra-thoracic disorders provoked by the projectile? Where is the ball found lodged?

The determination of a wound of exit at a point opposite to the point of entrance of the ball is an almost certain sign of penetration. I say almost certain, for certain exceptional cases have been seen in which the ball was found deflected upon a costal cartilage or upon a rib and, after having passed around the thorax, without penetrating it, perforated the skin on the back, or remained enveloped in the sub-cutaneous cellular tissue. But, with this exception, it may be said that the presence of an orifice of exit of the ball implies almost of necessity that the projectile has traversed the chest. Your first care will therefore be to ascertain if there is a wound of exit, and, in case this does not exist, to explore the skin, the sub-cutaneous cellular tissues and the muscular masses for the purpose of discovering the presence of the projectile at a point diametrically opposite to the orifice of entrance. In the case of our patient, the most minute examination reveals no wound, no pain, no projection, no induration sufficient to arouse a suspicion of the presence of the ball. If, then, the latter has penetrated the chest, it has remained enclosed therein.

In the second place, you ought to devote your whole attention to the wound of entrance, the examination of which will be capable, in certain cases, of furnishing you with important signs in favor of the penetration or non-penetration of the projectile. Except under special conditions, which I will point out in a moment, under no pretext should you introduce into the sinus stylets or cannulated sounds, even if absolutely aseptic. In fact, in narrow wounds produced either by projectiles of small calibre, as in the case of our patient, or by thrusts with the foil sword or stiletto, the lips of the wound have a tendency to close up immediately after the traumatic action, a fortunate circumstance which places the thorax under protection against the penetration of air or of septic products into its cavity. To proceed, in view of the diagnosis, to a reopening of the track, and thus expose the patient to the admission of infectious germs, would be to commit a grave mistake. This is not all: one also risks, in exploring the track, determining the opening of some vessel, the walls of which, injured by the pro-

jectile, no longer offer a sufficient resistance to the exploring instrument.

There would be no exception to the rule that I have just promulgated unless the wound presented abundant oozing and, above all, if there was a veritable hemorrhage, or, again, if you have reason to believe that this wound is not perfectly aseptic, that it contains, for example, fragments of clothing carried on by the projectile, or else that it has been contaminated posteriorly to the accident.

Under these conditions, after having enlarged the wound, you search for the injured vessel in order to cause hemostasis, or you proceed to the evacuation of the septic products or to the complete disinfection of the wound. Profiting by this intervention, which, finally, has in view the dressing of the wound, you will be able, if circumstances are favorable, to push your exploration further, but always with the greatest care. I hasten to add that hemorrhage is extremely rare in wounds caused by balls of small calibre, and that septicity of the wound is exceptionally realized in such cases. At all events, in the case of our patient there is no indication for exploration.

Two other symptoms may, in wounds of the chest, reveal the fact of penetration: both pertain to the physiological act of respiration. I speak of the local emphysema at the location of the wound and of the traumatopnœa of Fraser.

Traumatopnœa, or respiration at the seal of the trauma, consists in the entrance and the escape of the air at the orifice of the wound, at the moment of inspiration and expiration. Traumatopnœa always implies the invasion by air of the pleural cavity, that is to say the previous formation of a pneumo-thorax. When pneumo-thorax is once established, at every movement of expansion and contraction of the chest the external air is drawn in and then expelled through the wound. It is easy to understand that this symptom can only exist when the latter is sufficiently large.

On the contrary, if the wound is small, if its track is more or less oblique, and with still more reason if its borders are almost immediately glued together, the traumatopnœa can no longer be produced, but the air contained in the pleural cavity, the tension of which increases with each movement of expiration, finding no escape outwards, through the wound, insinuates itself and is infiltrated into the cellular tissue, and gives rise to emphysema, which may remain limited to the neighboring regions or invade almost the whole body.

I have already remarked that traumatopnœa was only met with in large wounds, and I have thought it my duty to mention incidentally this symptom which is absent in the case of small wounds and which, in fact, is not observed in our patient.

Parietal emphysema is also absent in his case, which is doubtless

to be attributed to the same cause, that is to say the narrowness of the wound and the almost immediate adhesion of its edges.

To resume, Gentlemen, in wounds of the chest, of small dimensions, and above all in those produced by projectiles of small calibre, the direct examination of the wound generally furnishes no sign of penetration. But fortunately stethoscopic examination will the more frequently admit of the formation with certainty of the diagnosis of a penetrating wound.

If, in effect, almost immediately after the traumatism we determine the presence of an effusion of air or of fluid in the pleural cavity, we can affirm that there is penetration. It has been seen that, in the case of our patient, examination of the thorax revealed to us, within the first few hours, the existence of an amphoric murmur at the upper part. Everywhere that this murmur is perceived, the voice is likewise amphoric. In the inferior portion, on the contrary, is found with the dullness, a complete respiratory silence, all the way up the thoracic vibrations are absent. You will be astonished perhaps that percussion does not yield an exaggerated sonorousness over the points where the amphoric murmur is heard, and that it, on the contrary, gives the sound of flatness. This phenomenon is doubtless to be attributed to the fact that the pleural cavity is overdistended with air.

You are not ignorant of the fact, Gentlemen, that these stethoscopic signs (amphoric murmur and voice in the upper portion of the thorax, dullness and absence of the respiratory sound in the lower portion) are pathognomonic of hydro-pneumo-thorax and indicate, on the one hand, the presence of air in the upper part of the cavity, and of a fluid in the more dependent parts.

* * *

Whence comes this air? What is the nature of this fluid, and what is its source?

In order to answer these questions, I will remind you briefly of what takes place at the moment in which a penetrating wound of the chest is produced. No matter if this wound is barely wide enough, the first effect of the opening of the pleural cavity is the entrance of air at the moment of inspiration, in consequence of the tendency to the intra-thoracic vacuum which is then produced. The entrance of the air into the pleura equalizing the pressure upon the interior and exterior of the lung, this organ obeys its own elasticity, and retracts more or less completely, according as it is more or less free from adhesions. The pleural cavity is then filled with air drawn in through the pleura, and if this is exposed enough we observe the entrance and the escape of air with each respiratory movement (traumatopnœa).

Such is the origin of the pneumo-thorax in case of wide open wounds.

But in the case of very narrow wounds, as in our patient, the pneumo-thorax cannot have this origin. The air can then only proceed from a wound of the lung, that is to say from the opening of a bronchiole by the vulnerant.

Moreover, this new source of pneumo-thorax is often added to that which we have already mentioned in cases of wide open wounds; for it is altogether exceptional that the vulneration agent, which has traversed the entire thickness of the thoracic wall and opened the pleura, does not affect the lung more or less profoundly, which is immediately applied against this wall. Thus it may be said that, in the immense majority of cases, every penetrating wound of the chest is complicated with a wound of the lung.

To sum up, in narrow wounds made by small projectiles the existence of a pneumo-thorax indicates penetration, and by reason of the known origin of the pneumo-thorax under such conditions it leads consequently to the diagnosis of a wound of the lung.

But a new sign will come the more frequently to add to the certainty of this diagnosis. This sign is hemoptysis, which may be abundant, moderate or very slight. In wounds by firearms, and particularly by small projectiles, the hemoptysis is ordinarily small in amount and of short duration, for the same reasons as in wounds of the same kind in other regions of the economy. But however brief it may have been, this hemoptysis none the less furnishes us the certain proof of the penetration of the ball which, having wounded the lung, has provoked the pneumo-thorax of bronchic origin.

Let us now see what is the nature and what the source of the liquid whose presence in the lower part of the pleural cavity has been revealed to us in our patient by percussion and auscultation.

Relative to its nature, if you remember that twelve hours scarcely after the accident the stethoscopic signs announcing the presence of an effusion at the base of the thorax were already manifest, if you place by the side of this rapidity in the production of the effusion this other consideration, that the patient is entirely apyretic, you are immediately brought to conclude that the fluid poured out into the pleural sac can only be blood, for when the pleural effusion, which often comes to complicate more or less rapidly penetrating wounds of the chest, is composed of a sero-fibrinous fluid, it never follows so nearly to the moment the wound was made and manifests itself gradually. Finally, it is always attended by a certain degree of thermic elevation. Then, with our patient, the pneumo-thorax is complicated with hemo-thorax.

As to the source of the blood which has formed this hemo-thorax,

one might incriminate the vessels of the parietes. But this origin of hemo-thorax, quite common in case of large wounds and above all in wounds by cutting instruments, could not be suspected in the case of our patient and besides ought almost never to be incriminated in the case of penetrating wounds by small projectles, which generally give rise to only a very feeble flow of blood.

Consequently, the source of the hemo-thorax should be sought for on the part of the lung, of which the wound is already demonstrated by the hemoptysis and the pneumo-thorax.

In effect, one easily explains to himself how the projectile, at the same time that it opened one or several of the bronchioles, must have wounded the vessels which accompany these latter. The blood derived from this vascular lesion has immediately flowed into the pleural cavity, in the same manner as the air proceeding from the opening of the bronchioles.

In conclusion, as to our patient, the diagnosis is well established: penetrating wound of the chest with injury to the lung and as a consequence hemoptysis and effusion of blood and air into the pleural cavity. I add, since the orifice of exit is not present, that the ball is found lodged in the lung or in the pleural cavity, without it being possible to determine its location with exactness.

* * *

But it is important, Gentlemen, that you should know that in case of certain persons suffering with penetrating wounds the signs which have allowed this exactness of diagnosis might be wanting.

In such an event, it is probable that you would have to utilize a symptom which I have confined myself heretofore to simply mentioning, some expectoration slightly tinged with blood, representing the symptomatology of a penetrating wound of the lung.

This sign which, besides often accompanies those of which mention has been made previously, is the emphysema appearing around the wound, and gradually filtrating the thoracic wall to extend itself to a greater or less distance and sometimes to invade almost the entire because it is absent in our patient, but which is sometimes present, with body.

I have already indicated its mode of production in the case of pneumo-thorax; but it is produced also by another mechanism, and in the absence of all pneumo-thorax, a circumstance that I have in mind more particularly at this moment. When there exist adhesions of the lung at the level of the point at which penetration has taken place, one understands that the lung cannot retract; the vulnerating agent, after

having traversed the wall of the thorax, penetrates directly into the pulmonary parenchyma at the same time injuring bronchi and blood vessels. Besides the flow of blood that is caused by the wound, the air contained in the opened bronchioles infiltrates into the substance of the tissue and extends little by little to the thoracic wall, as I have before remarked.

But, there is still another form altogether special of pneumo-thorax which although rare in wounds made by small projectiles, is pathognomonic of a wound in the lung. I mean emphysema appearing at the base of the neck.

It shows itself in those cases in which, following a wound of the lung, the air infiltrating itself into the parenchyma of the organ, gains the hilum, then following the vessels, the cellular tissues of the mediastinum, finally makes its appearance at the base of the neck, to spread to a greater or less distance from there.

Finally, in the absence of every actual sign, the ulterior phenomena of a pleuro-pulmonary traumatism will still sometimes allow us to fix the diagnosis. There may, in effect, be developed, from the fact of the presence of the ball, it may be lesions with their focus located in the lung, it may be a pleural inflammation. You will therefore wait for the development of the general or local phenomena before affirming the penetration of the projectile. But, if the inflammatory pleuro-pulmonary lesions were absent the diagnosis of penetration could then only remain doubtful.

It is my intention, Gentlemen, to briefly sum up the signs proper to penetrating wounds of the lung.

On the part of the wound, if this is large: issue of blood and air. Traumatopnoea (exceptional in wounds from balls); parietal emphysema.

On the part of the pleura: "pneumo-thorax and hemo-thorax."

On the part of the lung: "hemoptysis and emphysema of the base of the neck."

* * *

The prognosis of wounds of the chest is essentially variable. In effect, if it appears grave in the large wounds produced by cutting instruments, it is less serious for wounds by projectiles of small calibre, which may be compared, from this point of view, to the wounds by piercing instruments.

As to wounds by firearms, the prognosis is by so much the less grave as the projectile is less voluminous and is impelled by the greater velocity. A ball of small calibre, driven by a very rapid movement, will traverse the chest through and through without great damage. Wounds

by balls were much more serious formerly than they have been in the recent wars, and still more so than they will be in the future. The perfected gun of which use is made in modern armies is of small calibre and endowed with a veritably prodigious kind of projection.

The dangers to be feared in wounds of the chest may be divided into immediate and secondary.

1st. The immediate dangers are:

(a) Death by hemorrhage. In the penetrating wounds made by balls of small calibre, the patients succumb exceptionally to hemoptysis and rarely to hemo-thorax;

(b) Death by rapid asphyxia. This is to be feared in wounds involving both lungs at the same time. In unilateral wounds, it is directly connected with the hemo-pneumo-thorax or the hemo-thorax, which, after the manner of a large sero-fibrinous effusion, fill and over distend the pleural cavity, compress the sound lung and crowd the heart towards the opposite side.

Fortunately, in wounds caused by the balls of the revolver, the anfractuosités of the pulmonary wound and the peribronchic effusion of blood contribute often towards closing the vessel and the opened bronchiole, and thus in stopping the source of the pleural effusion. It is owing to this mechanism that, in the case of our patient, the effusion has remained restricted, and that, about the fifth or sixth day, the dyspnœa present at first has entirely disappeared.

2nd. The consecutive dangers are still more numerous, but are nearly all dependent upon infection:

(a) I merely mention hemoptysis secondary to the falling of the eschars in wounds by bullets. It is a rare accident;

(b) Infection through the parietal wound seldom occurs except in large wounds by cutting instruments, or in wounds badly treated. In wounds by firearms, the projectile is generally aseptic, except when it carries along foreign matter or fragments of cloth; besides, the wound that it creates is small and tends to become closed up of itself. You will therefore only have to apply a suitable antiseptic dressing in order to avoid parietal infection;

(c) Infection by the pulmonary wound is much more to be dreaded. When a bronchial tube of large size is opened, it may pour, at the same time as the air, some mucous products into the pleural cavity; the mucous products contain, in the normal state, some bacteria, whence may come an infection that we may qualify as primary.

Another mode of pleural infection results from the development of a lesion located in the lung. If the traumatic pneumonia is circumscribed there is nothing to be feared; if it is extended or diffuse, it infects the pleura in its turn by provoking in it an attack of pleurisy. This latter

may evolve like a simple pleurisy and be cured; but if, as happens the more frequently, there already existed a hemo-thorax, the blood being an excellent medium of culture for the microbes, one soon sees developed a purulent pleurisy and a putrid infection of the pleura, the gravity of which you all know.

In conclusion, after penetrating wounds of the chest, there may be developed, on the part of the pleura, three orders of infectious phenomena: 1st, a simple pleurisy or hydro-pneumo-thorax; 2nd, a purulent pleurisy; 3rd, a putrid pleurisy. You ought then to anxiously watch the appearance of general phenomena, such as: elevation of the temperature, shiverings, attacks of nausea or vomiting, anorexia, diarrhœa, etc., in order that you may form an estimate of the aggravation of the prognosis and apply yourself to the work of dispelling the danger by a rational therapeusis.

In the case of our patient, fortunately, the hemo-pneumo-thorax has evolved with a moderate intensity, almost benign. The thermometer has never reached 39 degrees; the appetite was absent for a few days as well as sleep, but the local signs have undergone, starting from the fifth day, a progressive diminution and, at the present time, we can consider him as being out of danger. There no longer remains, in the inferior portion of the pleural cavity, anything more than a slight murmur and a little egophony; the patient is apyretic, and yet, in spite of the benign character of the symptomatic evolution in these fortunate cases, in spite of the certainty almost of recovery, it is still necessary, as long as some stethoscopic phenomena persist, to reserve the prognosis. We sometimes see, in fact, some wounded persons present themselves in similar conditions, without general phenomena, with an absolute apyrexia, in a state of health excellent in appearance, and who are carrying, nevertheless, a purulent effusion in their pleural cavity.

* * *

It would require too long a time to give you a complete exposition of the course to pursue in wounds of the chest. I shall confine myself to giving you the general principles of treatment, insisting more particularly upon what pertains to wounds made by the balls of the revolver. The parietal wound, after antiseptic cleansing, must be closed as perfectly as possible with goldbeater's skin or a thin layer of cotton or of iodoformed collodion. If the wound is larger and its occlusion impracticable, you will cover it with a very large antiseptic dressing. You will order the patient to observe the most absolute repose, the trunk elevated and supported by pillows. Against the possible state of collapse, you will administer injections of ether or of caffeine. If necessary, a little opium internally will serve to quiet the patient.

Against parietal hemorrhage, you will proceed as for all wounds that bleed; I do not dwell upon this.

In the wounds made by the balls of a revolver, the hemo-thorax or the pneumo-thorax are never sufficiently abundant to lead to asphyxia. If, however, this latter were imminent, there should be no hesitation about making one or two aspirating punctures or even a free opening of the pleura, pleurotomy.

Finally, if the effusion is evidently purulent (and in case of doubt it will be necessary to assure yourself of this by an aspiratory puncture), whether there be fever or not, whether there be general phenomena or not, it is necessary to freely open the chest, performing, if it is required, a costal resection, and to treat the abscess of the pleural cavity as we ordinarily treat purulent pleurisy. It goes without saying that traumatic pleurisy, of putrid form, demands still more imperiously this same kind of treatment.



SELECTIONS.

ON SOME OF THE LIMITS OF THE ART OF SURGERY.

Delivered at the Forty-Seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

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Mr. President and Members of the American Medical Association:—Modern surgery has attained a degree of development which entitles it to the distinction of a science and an art. As a science, surgery is of recent date, having been founded and perfected during the last half of the present century. As an art, it has been practised for centuries by our ancestors with credit to themselves and benefit to the injured, the crippled and the sick. When Boyer wrote the introduction to his classic work on surgery he expressed the conviction that surgery had reached perfection. How little did he dream of the great changes that would be brought in the practice of his cherished profession by the progressive pathologists and surgeons of the next few generations! How innocent and absurd does such statement appear in the face of the labors of such men as Virchow, Rokitansky, Rindfleisch, Klebs, Recklinghausen, in pathology; Pasteur, Koch, Ogsten, Rosenbach, Baumgarten, in bacteriology; Lister, Langenbeck, Billroth, Hueter, Esmarch, Czerny, Gussenbauer, Nélaton, Verneuil, Terrier, Macewen, Gross, Agnew, in surgery; Terrier, Hitzig, Horsley, in cerebral localization; Spencer,

Wells, Keith, Winckel, Martin, Péan, Ségond, Pozzi, Sims, Emmet, Battey, in gynecology, and a host of other faithful unselfish workers who have made surgery what it is to-day and what it is intended to be—the most honored, respected and beneficent branch of the healing art. What a contrast between the standing of the surgeon of to-day in the community, the profession and from a scientific aspect as compared with his colleagues of only a century ago! It is not long since the art of surgery was limited to bleeding, cupping, leeching, setting of a broken limb, reducing a dislocation, stanching hemorrhage, opening an abscess or amputating a limb for injury or disease beyond the reach of conservative measures. He was the subordinate, almost slave, of the pompous, arrogant and self-confident physician of that time. He subsisted from the crumbs that fell from time to time from his master's table. The betterment in the standing and sphere of the members of the surgical craft during the last century is entirely due to the enormous progress that has been made in the science and art of surgery. During this time the legitimate field of medicine has gradually diminished before the advancing columns of progressive and aggressive surgeons. The physician no longer has a monopoly over the diseases of all the internal organs. The physician's distinctive apparel and gold-headed cane of but few years ago no longer intimidate the surgeon; they have disappeared from the scene and the surgeon stands on the same level, if not higher, in every respect with the physician in the eyes of the masses and the estimation of the scientific world. Modern pathology and the new science of bacteriology have laid a permanent foundation for the steady and progressive advance of surgical thought and work. The inflammatory complications of wounds and the etiology of most of the chronic infective surgical diseases have been cleared up by bacteriologic investigations during the last twenty-five years, and the knowledge thus gained has enabled the surgeon to prevent in a large measure the former and to treat intelligently and with increased success the latter. Many of the most noted surgeons who have left a strong and permanent impression on surgical literature and practice during the last quarter of a century have been enthusiastic and practical bacteriologists and competent pathologists. The wonderful development of operative surgery during the same time is one of the earliest and richest fruits reaped from the vast and fertile field sown and cultivated by bacteriologists of every civilized nation. To the immortal Lister belongs the honor of having opened a systematic and successful crusade against the surgeon's most treacherous enemies—the pathogenic microbes. The great principles which he conceived and introduced into practice created a new era in surgery. Antiseptic surgery is one of the many fruits of his genius and the one to whom we, as a profession, and humanity owe more than

to any other surgeon dead or living, has been permitted to live long enough to see the creation and blessings of aseptic surgery, the handiwork of his innumerable enthusiastic followers. Antiseptic and aseptic surgery have smoothed the rough and rugged pathway of the practical surgeon. Ordinary cleanliness has given way to surgical cleanliness. The almost universal introduction of antiseptic and aseptic precautions in the treatment of wounds in private and hospital practice has nearly eradicated the three greatest enemies of the surgeon of old, namely, hospital gangrene, erysipelas and secondary hemorrhage, and minimized the occurrence of suppuration and its manifold immediate and remote complications.

No wonder that a sense of security created by such wonderful changes made the surgeons bold. In consequence of such revolutionary changes wrought in the practice of surgery new territories were invaded and organ after organ, the seat of injury or disease, were subjected to direct surgical intervention. Step by step the scalpel found its way into localities where formerly the physician had reigned alone and supreme, and where its presence would have been regarded by him as convincing proof of homicidal intent. No better evidence can be advanced to show the difference in the kind and scope of work of the surgeon of to-day with the one before the pre-antiseptic time than a comparison between the works of operative surgery of now and then. The sense of safety which took possession of the surgeon and an earnest desire to extend his skill to the successful treatment of affections which had heretofore baffled the efforts of the physician, brought on a warfare on almost every organ the seat of real or imaginary disease. The physician found himself suddenly out of his long time honored routine practice. The specialists utilized the opportunity and left no stone unturned to extend their sphere of activity. Brain surgeons, abdominal surgeons, neck surgeons appeared on the scene and filled the medical press with accounts of their wonderful surgical feats. The old-fashioned gynecologist, whose chief occupation consisted in introducing and removing pessaries, cauterizing so-called ulcers of the cervix, swabbing out the uterus and inserting medicated vaginal tampons, became restless and anxious to exchange harmless, bloodless measures for the knife and scissors. His desire for bloody operations was not satisfied by sewing lacerations of the cervix and perineum. He felt that in order to keep abreast with the spirit of the present age he must increase his range of action, and in due course of time the ovaries, the Fallopian tubes and uterus became the theater of his aggressiveness. Even the acquisition of this additional territory did not satisfy his ambition. The adjoining great abdominal cavity, with its many important organs was looked upon with a jealous eye and it has been made the common camping ground of the general surgeon and the gynecologist for several years.

The throat and nose specialist, under the same influences, became disgusted with his brush, powder-blower and atomizers; sharp spoons, chisels, and saws came into requisition, and the number of deflected septa, hypertrophic turbinated bones and third tonsil increased alarmingly and were attacked most energetically. The rectal specialist, who made a modest living by stretching the sphincter ani and ligating piles, saw a fortune in adding to his limited sphere of activity, resection of the rectum, and later, emboldened by his efforts carried his crusade to the topmost limits of the large intestine. The average orthopedist is no longer satisfied to correct deformities by the use of bloodless manual and mechanical measures; he has acquired a fondness for the knife, saw and chisel, so as not to be left behind in the procession. The genito-urinary surgeon has become tired of treating gonorrhea, strictures and syphilis; he can see no reason why he should not cut for stone, extirpate kidneys and perform plastic operations on the ureters.

The furor operativus manifested in these and other special departments of surgery, and its obvious results, render the standing and legitimate scope of the general surgeon very uncertain and indefinite at the present time. Let the general surgeon turn to the right or to the left, advance or retreat, and he finds himself on reserved territory. As for the physician, he is expected to answer night calls, prescribe for diarrhoea and whooping cough, watch cases of typhoid fever, measles, scarlatina and smallpox, and should complications arise and he does not report to the proper authority he renders himself liable to censure. Much of this ill-applied energy in the surgical world has resulted in detriment to patients and in retarding actual surgical progress. Operative surgery has been carried to extremes. A calm inspection of the ground that has been gone over will show "Some of the Limits of the Art of Surgery," the subject which I have chosen for this address.

Antisepsis and Asepsis.—The marvelous reduction in the mortality following injuries and operations which the present generation has witnessed is largely due to the prevention of wound complications by the employment of efficient antiseptic and aseptic precautions. Improved means of hemostasis and the more efficient treatment of shock might reasonably claim a certain share in bringing about such a desirable change in the results of surgical practice, but what has made our work more satisfactory and the statistics of various operative procedures more encouraging is the prevention of infection, the protection of the patient against the immediate and remote effects of sepsis and suppuration. The treatment of wounds with these objects in view has been simplified and rendered more efficient from year to year, but it cannot be said that perfection has been reached. We are not yet in possession of an ideal absorbable ligature and suture material. The person who will show us how to prepare the animal ligature and suture in such a

way that it will not only be absolutely aseptic, but also antiseptic and without loss of its tensile strength, will be entitled to the lasting gratitude of the entire profession. The disinfection of hands and field of labor is open to future improvement. The important matter of drainage remains in anything but a satisfactory condition, and the questions frequently raised, when to drain and how to drain, must be definitely settled by future experience and research. There are surgeons to-day who do not take into account the possible failure of antiseptic and aseptic precautions in estimating the dangers incident to operative procedures. Have we not all heard so-called abdominal surgeons say that an exploratory laparotomy is devoid of danger? Is it not a fact that the abdomen is being opened daily by men who have not the faintest idea of what they may have to do, simply because they regard such a step as harmless and free of danger and the shortest and easiest way to make a diagnosis? To say that such a blind confidence in the efficiency and safety of aseptic precautions is not in accord with the work of the conscientious surgeons is to put it mildly. It is fortunate for the patients of such ever-ready and self-confident operators that the peritoneum under ordinary circumstances can dispose of more pathogenic microbes without harm resulting than any other tissue of the body. If it were not such a serious matter it would be amusing to see how such men explain an occasional death that occurs in their practice in cases where it was least expected. If, perchance, a post-mortem examination was held, the first statement made is that the peritoneum showed no evidences of inflammation, consequently death must have occurred in consequence of shock, exhaustion, bronchitis, edema of the lungs, or heart failure. Very recently a prominent surgeon in giving his testimonial in recommending a certain kind of catgut, made the statement that he had performed one hundred consecutive major operations without having seen a single drop of pus. I have no reason to doubt the veracity of this gentleman's statement, but I am firmly convinced that it would be difficult, if not impossible, to duplicate such an experience in the practice of the average general surgeon.

I have made it a duty on my part to familiarize myself with the advances made in the technique of aseptic surgery and have the good fortune to perform all my operations in two of the best hospitals in Chicago, and in a fairly well equipped college clinic, and yet I am only too willing to confess that I never finish my day's work without seeing pus. I have a painful recollection of two amputations for carcinoma of the breast on private patients, in both of which every possible precaution was carried out, and yet to my utmost disappointment, both of them died of the most virulent form of sepsis I ever encountered. To offset these cases, I might refer to perhaps over two hundred similar operations

in which, under much less rigid precautions, with few exceptions, faultless wound healing was obtained. I remember, too, a case of genu valgum in an adult treated by transcondyloid osteotomy under strict antiseptic precautions, where the operation was followed by violent suppurative osteomyelitis and extensive necrosis which for a long time seriously threatened the limb and life of the patient. I am sure that I am not alone in relating such experiences. Every surgeon is occasionally humiliated by such mishaps and here is the proper place to make open confessions. The careless, reckless remark so often made by men who ought to know better, that the surgeon who understands his business can make and treat wounds, which, if dressed properly, will heal without suppuration, has reached the ears of the legal profession and has already entangled many a worthy and honest member of our profession in the complicated and trying machinery of the law. I envy the surgeon who has implicit confidence in this or that method of preventing wound infection, but I am confident that I but voice the sentiment of the vast majority of surgeons by making the statement that one of the limits of the art of surgery at the present time is the inadequacy of our available resources in furnishing wounds, even under the most favorable circumstances, absolute protection against infection.

Phlegmonous Inflammation.—The employment of antiseptic and aseptic precautions in the treatment of intentional and accidental wounds has greatly diminished the frequency of progressive phlegmonous inflammation and its often disastrous consequences. That such an occurrence cannot always be prevented, even by the most scrupulous care and attention to details, every surgeon of experience is willing to admit. In the most virulent forms of phlegmonous inflammation the most heroic and timely treatment, local and general, is often fruitless in averting speedy death. In the most desperate cases, the surface lesion is often insignificant, the infection following the lymphatic pathways, soon reaches the general circulation, resulting in death from acute sepsis before any decided gross pathologic lesions have appeared at the seat of infection or in any of the internal organs. How rapidly general infection may take place has been shown by the experiments of Schimmelbusch, who found microorganisms in the spleen five to ten minutes after infection of a wound. Colin and Niessen demonstrated by their experimental work that amputation a few minutes after inoculation, of the ears and limbs of rabbits with pure culture of anthrax, did not protect the animals against generalization of the disease. Such cases in the human being fortunately are seldom met with, but when they do occur, the art of surgery is powerless in arresting the progress of the disease. Parenchymatous injections of solutions of carbolic acid or corrosive sublimate along the course of solutions lymphatics, and the internal use of alco-

hol in heroic doses promise the most, but in the great majority of cases the extension of the infection continues and terminates speedily in death from general sepsis. Whether bacteriology will furnish us with a more potent weapon in the treatment of such cases the future must determine. When the infection has resulted in suppuration the old adage *ubi pus, ibi incisio* remains as true to-day as before the microbic origin of pus was known. In the treatment of diffuse phlegmonous processes it is now customary to make free incisions, establish free drainage and disinfect the cavity by flushing it freely with a safe and yet efficient antiseptic solution, such as a saturated solution of acetate of aluminum, a 3 per cent. solution of carbolic acid or a 1:5,000 solution of corrosive sublimate and apply to the part hot compresses wrung out of the same solution. A few years ago Helferich advised laying open of the entire cavity by a single incision, recently Kocher pleads in favor of small incisions for the reason that pus microbes multiply more rapidly when freely supplied with oxygen. I believe the best treatment is half way between these two extremes, that is, multiple incisions large enough to insert drains the size of the little finger with a view of establishing a perfect system of drainage. We cannot expect much from a single disinfection. In severe cases in which life is threatened by sepsis, I invariably resort to continuous irrigation with a saturated solution of acetate of aluminum, a non-toxic and yet very efficient antiseptic agent. The inflamed part should be immobilized and maintained in an elevated position until the inflammatory edema has subsided. The same treatment yields the most happy results in the treatment of acute suppurative inflammation of the large joints. One of the great shortcomings of the art of surgery to-day is the lack of measures to deal more efficiently with progressive suppurative affections and secure for suppurative cavities an aseptic condition in a shorter and more direct way. In cases of circumscribed abscesses it is generally believed that the sooner the incision is made the more prompt will be the relief and the more speedy the cure. Clinical experience has not confirmed these expectations. The old surgeons applied emollient poultices until the abscess became soft before they used the bistoury. No modern surgeon has any use for the filthy germ-breeding poultice, for which he has substituted the antiseptic, moist, hot compress which answers the same purpose, as it furnishes the necessary heat and moisture, and at the same time prepares the surface for the incision. We are, however, almost as powerless as our forefathers in limiting, much less aborting, a suppurative inflammation. One of the greatest and most useful innovations in surgery would be a remedy, local or general, which would enable us to abort the process of destruction after the classical symptoms which characterize suppurative inflammation have set in. We must look to bacteriology to fill up this most important gap.

Acute Suppurative Osteomyelitis.—Closely allied to phlegmonous inflammation of the soft tissues is acute suppurative osteomyelitis as it is caused by the same kind of microbes and results in more or less extensive destruction of tissue. The etiology and pathology of this disease are now well understood and upon them is based the early operative treatment which is generally endorsed by the profession at the present time. The danger from general sepsis is greater in the more serious forms of osteomyelitis than a similar affection of the soft tissues owing to the location of the primary focus of infection and the frequency with which the adjacent large joints become implicated during the progress of the disease. The early removal of the osteomyelitic product by operative interference, as a rule, relieves pain promptly, limits necrosis, guards against joint complications and minimizes the danger from general sepsis. Immobilization of the affected limb in proper position and the exposure of the osteomyelitic focus by the use of the chisel or gouge as soon as a positive diagnosis can be made are the modern resources which have succeeded in greatly reducing the mortality of this disease as well as its immediate complications and remote consequences. There are, however, cases of acute osteomyelitis in which the earliest intervention of the art of surgery is powerless in preventing death from general sepsis. These are the cases of osteomyelitis in which simultaneously or in rapid succession a number of the long bones become involved and where the local signs and symptoms are overshadowed by the general symptoms which point to a progressive sepsis and which are seldom favorably influenced by either local or general treatment.

Tuberculosis of Joints.—Only a few years ago the surgeons who paid special attention to diseases of the joints were enthusiastic advocates of early resection or arthrectomy in cases of tubercular joint affections. Typical resections were made regardless of the anatomical location or the extent of the disease. It was believed that such medical treatment would succeed in eliminating the local affection and in preventing the extension of the infection to distant organs by reinfection from the peripheral focus. Statistics prove that these hopes are unfounded and conscientious and thinking surgeons have substituted largely in place of operative treatment conservative measures. The surgeon forgets too often that tuberculosis of joints seldom appears as a primary affection, but, as a rule, appears as a peripheral manifestation of the existence of an antecedent perhaps undiscoverable tubercular affection of another organ, hence the removal of the accessible tubercular product does not necessarily protect the patient against tuberculosis of other joints, or organs, or general miliary tuberculosis. It is, on the other hand, a familiar clinical fact that the operative treatment of joint tuberculosis has not infrequently been followed by tuberculosis of other organs or

general miliary tuberculosis. The short-comings of the art of surgery are well brought forward in the treatment of tubercular joints. In large clinics where but a few years ago resection of joints for tuberculosis was a daily occurrence such operations are now rarely witnessed. This change in practice is largely due to the beneficial effects obtained from intra-articular and parenchymatous injections of iodoform glycerin injections. I have resorted to this treatment in hundreds of cases with the most satisfactory results. In about one-half or two-thirds of all cases of uncomplicated joint tuberculosis this treatment proves curative. It is of special value in the treatment of tubercular abscesses in communication with a tubercular joint or bone. From one to three or four injections usually suffice in obliterating the abscess cavity. The tapping and injection must be done under the strictest antiseptic precautions lest the operation will aggravate the case, perhaps render it hopeless, by becoming the direct cause of a mixed infection with pus microbes. As some persons are peculiarly susceptible to the toxic action of iodoform the minimum dose, two drachms of a 10 per cent. emulsion, should be used in the beginning. In cases complicated by renal affections this caution should be increased, as any affection of the kidneys retards the elimination of the iodoform and thus increases the danger from intoxication. Another important precaution in tapping a tubercular abscess is not to puncture the skin where it is thin and cyanotic, as when it is made in such a place the puncture is very liable to give rise to a fistulous opening and consequently increased risk of infection with pyogenic microbes. The puncture must be made through normal skin, if need be some distance from the abscess, and after removal of the canula, it should be sealed with iodoform collodium and a small pledget of sterile cotton. Immobilization of the limb or part thus treated is often useful, but not always necessary. During the process of repair initiated by the iodoform injections, the capsule of the joint often undergoes great contraction which if not counteracted by an appropriate mechanical support may result in a deformity difficult of correction short of operative interference. In cases of joint tuberculosis in which this treatment does not succeed in effecting a cure, it will prove to be the best possible preliminary treatment to a successful arthrectomy or atypical resection. Iodoform is absolutely useless in the treatment of tubercular affections complicated by suppuration. The antibacillary effect of iodoform in such cases only asserts itself after the pyogenic product and its causes have been eliminated by operative measures or chemical disinfectants or by a combination of these two antiseptic resources. In cases in which the iodoform treatment fails, or in which it is contraindicated, arthrectomy and atypical resection have been largely substituted for typical resection.

Malignant Tumors.—The imperfections of the art of surgery become very apparent in the treatment of far-advanced malignant disease of any part or organ. The essential cause of carcinoma and sarcoma remains to be discovered. The science of surgery must first divulge the true nature of tumors before we can expect a decided advance in their more successful treatment. The essential features of the modern treatment of malignant tumors may be summed up very briefly as follows: Operate early and thoroughly. The treatment of inoperable sarcoma by injections of the sterilized toxins of the streptococcus of erysipelas and the bacillus prodigiosus has not filled the expected results. In my paper on this subject read in the Surgical Section of this Association at the last meeting I gave the results of my experience with this treatment. An additional experience since that time only confirms my views expressed at that time concerning the utter lack of curative power of these toxins in the treatment of genuine cases of sarcoma. The microscope is no infallible means of diagnosis in differentiating between small round-celled sarcoma and some of the granulomata. The curative effect of a remedy can not be established unless an absolutely correct diagnosis can be made of the disease in the treatment of which it is employed. The discovery of some remedy, which by its local or general action would correct erratic cell growth and transform embryonic into mature cells might possibly change malignant into benign tumors, and by doing so deprive them of their malignant clinical tendencies. Experimental researches in this direction might possibly lead to a rational treatment of malignant tumors short of a resort to the knife or caustics. At the present time the surgeon's resources in the treatment of malignant tumors are largely limited to an early and thorough use of the knife. Every surgeon deplors the fact that with the exception of carcinoma of the lip or of parts similarly exposed, the patients who apply to him for surgical treatment with few exceptions are suffering from malignant tumors which extend beyond the organ primarily affected and have given rise to regional dissemination, general metastasis or both. For instance, of the over 200 cases of carcinoma of the breast which have come under my own observation, I remember only one case in which, during the operation, the axillary glands were found unaffected, and in this case the columnar celled carcinoma, the size of a pea, had obstructed a duct, in consequence of which a retention cyst the size of a walnut developed, for which the patient applied for treatment. In cases of carcinoma of the uterus that come to me for examination and treatment, I find that only one out of every eight or ten cases is a proper case for a radical operation. In more than one-half of my cases of carcinoma of the rectum, I refuse extirpation of the affected organ, and advise, in its place, an inguinal colostomy, because the disease has extended to the pelvic connec-

tive tissue, the retro-peritoneal lymphatic glands or adjacent organs. Of eighteen cases of pyloric carcinoma of the stomach subjected to operative treatment, I found the disease limited to the part primarily affected only in one case; in the remaining cases the disease had extended invariably to the lymphatic glands, and in some of them to the adjacent organs, liver, gall-bladder, pancreas, omentum and colon. It is the operative treatment of advanced cases of malignant disease that brings so little benefit to the patient and so much disappointment to the surgeon. Asepsis and a greatly improved operative technique have done much to improve the results of operative treatment of malignant tumors, but they have not succeeded in doing away with well-recognized restrictions upon the art of surgery to which I now desire to call your attention. There is, perhaps, no other department in surgery which presents more diversity of opinions than the selection of cases of malignant tumors for operative treatment.

The conscientious surgeon looks as carefully for contraindications as for indications for radical operations. He is concerned more for the welfare of his patient than his own selfish interests. A prospective liberal fee has no influence in changing his decision. He makes a careful examination of his patient, the tumor and its environments, before he recommends an operation. He has learned from sad experience that aside from justifiable palliative operations for obstructive malignant affections, imperfect operations have proved as detrimental to his patients as to his reputation. He looks the ground over carefully before he decides to attempt a radical operation. The squeezing out of a fixed carcinomatous uterus between forcipressure forceps is not likely to prolong the life of the patient or increase the reputation of the surgeon who ignores to such an extent the limits of the art of surgery. The removal of a carcinomatous breast without a thorough clearing out of the axillary space may increase, for the time being, the bank account of the operator, but it will surely prove a detriment to the patient. The partial or complete excision of the rectum for carcinoma complicated by regional infection is an operation attended by great immediate risk to life without a ray of hope of effecting a permanent cure. Such bold and reckless overstepping of the limits of the art of surgery is not calculated to increase the estimation of our profession in the eyes of the public or to receive the sanction of the conscientious, discriminating surgeon. The radical removal of a malignant tumor means more than the extirpation of the primary tumor; it means the removal of every malignant cell, whether in the immediate vicinity of the primary growth or in the same region. Evidences of distant metastasis furnish a positive contraindication to operative interference. Regional dissemination beyond the reach of complete removal of every vestige of tumor tissue,

local and regional, without imminent risk to life, constitutes an equally forcible argument against a radical operation. Large surface defects made by extensive radical operations should always be covered by a plastic operation or by Thiersch's method of skin grafting. It has always been my aim to cover the wound with skin by either of these methods immediately after the extirpation of the tumor for the purpose of securing healing by the first intention, as I am satisfied that the slow process of healing of large surface defects by granulation, cicatrization and epidermization is conducive to an early local recurrence.

Surgery of the Three Great Cavities.—The systematic invasion of the three great cavities of the body for the treatment of injury or disease is one of the great triumphs of modern surgery. Our ancestors entertained a well-founded dread for operations which necessitated opening of any of the great serous cavities, knowing from experience their great susceptibility to septic infection. Recent experience has shown that any of these cavities can be opened for diagnostic or therapeutic purposes without much danger, provided the operation is performed under strict antiseptic precautions. The prevention of septic complications by asepsis has been the means of creating visceral surgery. The sense of safety in subjecting the different viscera to direct operative treatment which has taken possession of the profession has enlarged to a wonderful extent the field of operative surgery, but it has carried at the same time the work of the ambitious enthusiastic surgeon beyond the limits of his art. Many of the bold attempts upon the organs of the three great cavities are far beyond the legitimate restrictions established by the science of surgery. The mania for achieving new victories outside of the sphere of legitimate rational surgery has neither brought lasting reputation to the adventurers nor benefit to suffering humanity. Many of the new operative procedures remind one more of sensationalism than the product of mature, deep surgical reasoning. The accounts of new operations that are being constantly devised have left operative surgery in a state of confusion. Works on operative surgery that left the press six months ago are obsolete or at least unsatisfactory to-day. The technique of nearly every operation is constantly undergoing changes by the addition of important or unessential modifications. Nearly every surgeon has a flaming desire to connect his name with an instrument of his invention, a new operation or a modification of an old one. A new operation is devised, a case is found upon which it is tried, and if the result is in any way favorable an account of it is sure to find its way promptly into the current medical literature. Many members of the medical profession are willing and ready imitators, who are always anxiously waiting for new discoveries and improvements, ever ready to apply them in their practice without questioning their utility or

justifiability. This blind imitation of the practice of others has been the source of great harm to confiding patients and has exerted a powerful inhibitory effect on the true progress of surgery. This is an age of bold surgery. The surgeon who is careful in the selection of his cases, slow and painstaking in his work, need not look for recognition on the part of his students or colleagues; it is the man who lays the abdomen open by a single stroke of his knife, removes two healthy ovaries and closes the incision and returns his patient to her room in seven minutes, who commands the attention of his audience and bears with a self-confident dignity the proud distinction of being a bold and brilliant operator. In calling your attention to the limits of the art of surgery in the treatment of injuries and diseases of the organs contained in the three great cavities, time will only permit to point a few of the most flagrant transgressions of the established principles of surgery during the last few years.

Surgery of the Skull and Brain.—The use of the trephine in the treatment of fractures of the skull has had a varied experience since the time of Hippocrates. Trephining of the skull for injuries is one of the oldest operations in surgery. From time to time strong arguments have been made against the indiscriminate operating for fractures of the skull. Stromeyer and his followers abandoned the operation of trephining, believing and claiming that the operation resulted in more harm than good to the patient. It is not difficult to conceive that at that time the conversion of a subcutaneous into an open fracture was attended by great risks from infection. The minimizing of the danger from infection by aseptic precautions again brought the trephine into general use not only in the treatment of fractures of the skull, but also in the treatment of pathologic intracranial lesions of a non-traumatic origin. Many surgeons now advocate trephining in all fractures of the cranial vault, claiming that the operation would reduce to a minimum the dangers from remote complications such as obstinate headache, epilepsy and insanity. The question arises, is such a position in consonance with rational surgery? Every surgeon knows that such remote complications after fracture of the skull not subjected to trephining are rather the exception than the rule. It is evident that operative interference in such cases has been carried to extremes. Even under the protection of aseptic precautions, the transformation of a closed into an open fracture of the skull is attended by certain risks which no surgeon can afford to ignore and which must be taken into careful consideration before operative interference is determined upon. This advice applies with special force to the treatment of fractures of the skull in children, as in them spontaneous elevation of the depressed fragment or fragments is frequently observed during the process of repair. There is

no rule in surgery without its exceptions, hence the advice to use the trephine in fractures of the skull with depression without regard to the age of the patient or the presence or absence of symptoms, lacks a moral as well as a scientific foundation. The art of surgery has its well-founded limits in the treatment of fractures of the skull. In my opinion, operative interference is absolutely indicated in fractures of the cranial vault under the following circumstances: 1. All open fractures, including gunshot and punctured fractures. 2. Depressed fractures attended by well defined symptoms caused either by the depression or intracranial complications. 3. Rupture of the middle meningeal artery with or without fracture of the skull. The use of the chisel or trephine is superfluous and often harmful in the treatment of subcutaneous fractures of the vault of the skull with or without depression, more especially in the case of children. The operation of trephining in the prevention of remote complications of fracture of the skull is often powerless, owing to the existence of visceral lesions which it can neither remove nor render harmless. The indiscriminate use of the chisel and the trephine in the hands of the inexperienced practitioner is fraught with danger and should not be encouraged by teachers and expert surgeons. Such teachings and practice are in conflict with the correct principles which should govern the true art of surgery. Brain surgery is of recent origin. It is in this department of the operative work of the surgeon that art has gone far in advance of the science of surgery. Cerebral localization and aseptic surgery have made it possible to treat a few intracranial lesions successfully by direct operative interference. Cerebral localization in its infancy, and the minutest aseptic precautions do not absolutely protect against infection. A few years ago the columns of the medical press brought glowing accounts of the removal of brain tumors. Patients were exhibited at the meetings of different medical societies with enormous cranial defects and ghastly depressions marking the place from whence a large glioma had been removed successfully. Such cases aroused the most intense attention and interest at the time, but where are they now? Subsequent reports failed to appear, and an ominous silence remains regarding their ultimate fate. Many of the cases of tumor of the brain operated upon who never recovered from the immediate effects of the operation were never reported, and those who were fortunate enough to survive the fearful ordeal, after a longer or shorter interval joined the silent majority. One of the well defined limits of the art of surgery is the operative treatment of malignant tumors of the brain. Tapping and drainage of the lateral ventricles as taught and practiced by Dr. W. W. Keen, may and undoubtedly will become in the future a useful and legitimate surgical resource in the treatment of inflammatory affections of that part of the brain, but so far

it has not yielded encouraging results. When Lannelongue devised linear craniotomy for the liberation of the undeveloped imprisoned brain in the skull of infantile idiots, his doctrine was received with open arms by many surgeons who occupy the front rank in the profession. The lay and medical press vied with each other in bringing before the general and medical public the wonderful results following the use of the trephine, chisel and rongeur forceps in opening the skulls of such unfortunate children. Many of these little innocents, of course, succumbed to the immediate effects of the operation, but this did not subdue the ardor of the surgeon, as he had been instrumental in transferring an object of pity to that happy home where microcephalus is unknown, and had relieved the family of a troublesome trust. Where are the cases that have been permanently benefited by the operation? Ask Lannelongue whether his hopes have been realized. I am free to confess that I have never been able to muster my courage to attack the skull of a poor, innocent and yet happy microcephic child, because I have always regarded the operation as useless in promoting brain development. The responsibility of the surgeon is not limited by the defective mental development of the child nor the importunity of the parents in demanding the operation at all hazards. The surgeon should stand guardian over such a charge, mindful of the limits of the art of surgery. Have we a right to estimate human happiness? The driveling idiot has many enjoyments and pleasures that you and I know nothing about. His responsibilities to God and man are limited, and his existence on earth is a long, happy dream, which only ceases when the soul leaves the imperfect body, and returns from whence it came, where mental distinction is unknown. The operative removal of inflammatory products from the cranial cavity and the brain has yielded the most satisfactory results, and constitutes one of the most important achievements of modern surgery. This part of cerebral surgery will reach perfection with the progress of cerebral localization, and should be encouraged and cultivated by all who are desirous of extending the present limits of the art of surgery.

Surgery of the Chest.—Modern surgery has done much toward the alleviation and cure of injuries and diseases of the organs of the chest, but it is here also that we are confronted by well defined limitations of the art of surgery. The successful treatment of hydrothorax and empyema of the pleural cavity is the result of a better knowledge of their etiology and pathology, and an improved operative technique under strict aseptic precautions. Tapping of the chest for tubercular hydrops, followed by iodoform glycerin injection has done more for this class of patients than counter irritation and the internal administration of digitalis, squills, acetate and iodid of potassium. Free incision of the empyemic

pleural cavity after resection of one or more ribs, followed by efficient tubular drainage, has become an established practice by almost universal consent. The treatment of chronic empyema with thickened pleura and collapsed adherent lung by Estlander's multiple rib resection or Schede's thoracoplastic operation has yielded brilliant results. The treatment of abscess of the lung by rib resection, free incision with the knife point of the Paquelin cautery and tubular drainage has been the means of saving many a precious life, which, without the aid of the surgeon, would have been doomed to a premature death. With few exceptions this is about all that has been accomplished by the surgery of the chest. It is true that a few surgeons have been fortunate enough to cope successfully with a few affections of the heart and its serious investment, the pericardium. Tapping of the pericardium for serious effusion has become one of the established operations in surgery. A very few cases of pyopericardium have been brought to a successful termination by free incision and drainage. We are familiar with isolated cases in which bold surgeons exposed the heart by a free incision for the removal of a foreign body, or sutured a visceral wound, and their effort was crowned by success, but, on the whole, we are painfully conscious of the fact that the art of surgery has done very little toward the successful treatment of injuries and diseases of this organ. Many have been the efforts of surgeons to supplant the physician in the treatment of pulmonary tuberculosis, the results of such efforts are familiar to you all. In the very nature of things, such trespassing upon the legitimate field of the physician has been followed, without exception, by an ignominious failure. It is unfortunate, but true, that the surgical treatment of pulmonary tuberculosis by direct surgical intervention is beyond the legitimate limits of the art of surgery. Surgery has done very little during the last two decades toward a betterment of the treatment of penetrating stab and gunshot wounds of the chest. The careful surgeon knows that the hermetic sealing under aseptic precautions of the wound of entrance and exit, if such exists, affords the greatest degree of safety in arresting hemorrhage and in preventing septic complications. Free incision of the cavity of the chest with a view of arresting hemorrhage by ligature, or tamponade from any of the organs which it contains is attended by such great immediate risks to life that the possible benefits to be derived from it are more than overbalanced by the immediate dangers which attend such an aggressive course of treatment. The removal of malignant tumors of any of the organs of the chest is beyond the present limits of the art of surgery.

Surgery of the Abdomen.—For reasons that we do not require an explanation here, the abdominal cavity was largely a *terra incognita* to the surgeon of less than half a century ago. To-day it is the favorite

battle-ground of the average surgeon, and the select field of the so-called abdominal surgeon.

The bold surgery of to-day upon the organs of the abdominal cavity is largely due to the comparative safety with which the peritoneal cavity can be invaded under proper aseptic precautions. This new field for the display of surgical talent and ingenuity has been diligently cultivated in a legitimate way by the honest progressive surgeon, but it has also been made the playground of unscientific sensational surgery by men who are ignorant of the legitimate limits of the art of surgery. The simple fact that any of the abdominal organs, in part or in whole, can be removed successfully without much danger to life does not establish the legitimacy of the surgical procedure. Billroth, one of the greatest, and certainly one of the most honest surgeons of this age, did not realize the expectations he entertained in regard to the benefits to be derived from direct surgical intervention in cases of carcinoma of the stomach, justifying surgical interference. Notwithstanding the wonderful improvements in the technique of operations upon the stomach, partial gastrectomy and pylorotomy have yielded anything but encouraging results. In nearly 50 per cent. the patients subjected to radical treatment for malignant disease of the stomach, succumbed to the immediate effects of the operation. In all of the cases which survived the operative ordeal, the patients succumbed to a relapse in from a few months to several years. I have opened the abdominal cavity for the surgical treatment of malignant disease of the stomach nineteen times, and only in one case did I find the disease limited to the organ primarily affected and in this case the general health of the patient had been so much deteriorated by the obstructive pyloric carcinoma as to contraindicate a radical operation, in all of the remaining patients a pylorotomy or partial gastrectomy was out of the question, as the carcinoma of the pylorus or stomach had extended to adjacent organs or had given rise to regional infection through the lymphatic glands sufficiently to contraindicate any attempt at radical removal of the disease. The legitimate limits of the art of surgery in the treatment of malignant disease of the stomach embrace the cases in which a sufficiently early diagnosis can be made when the malignant disease is limited to the organ primarily involved and the strength of the patient is adequate to overcome the immediate effects of the operation. The removal of the carcinomatous pylorus or any part of the stomach after the malignant disease has extended to adjacent organs or after regional infection through the lymphatic glands and channels has taken place is tampering with the present limits of the art of surgery. The palliative operations for carcinoma of the cardiac and pyloric extremities of the stomach have yielded excellent results, and should receive the sanction of every surgeon

who has the best interests of his patient at heart. Witzel's operation for establishing an external gastric fistula in cases of malignant obstructive tumors at the cardiac orifice of the stomach, and Rockwitz-Wölfler's operation for pyloric carcinoma are the palliative operations which promise the most with the least immediate risks to life in all cases of malignant tumors of the stomach which give rise to obstruction. The treatment of intestinal obstruction by surgical intervention has become an established custom. Physicians and surgeons imbued with a proper moral and scientific sense, recognize the importance of early surgical interference in all cases of intestinal obstruction due to mechanical causes. An early positive diagnosis is an essential prerequisite to success in such cases which must be followed by prompt action on the part of the surgeon. Intestinal surgery will celebrate its greatest triumphs with the progressive development of our diagnostic resources in the early recognition of the nature and location of the mechanical causes which give rise to intestinal obstruction. Volvulus and invagination, some of the most serious forms of mechanical obstruction, if they could be recognized within a few hours of their appearance and subjected to surgical treatment at once would no longer figure so conspicuously in our mortality reports. The division or excision of a constricting band in the treatment of intestinal obstruction from such a source, if performed in time, would yield a very small mortality, but if not brought within the present limits of the art of surgery, such cases seldom recover from the immediate effects of the operation.

The radical treatment of malignant tumors of the intestinal canal has not been attended by satisfactory results as a rule. In the majority of cases the operations were postponed until the malignant disease gave rise to symptoms of obstruction, when it was usually found that the carcinoma had passed beyond the legitimate limits of a radical operation. The implication of adjacent organs and extension to the lymphatic glands of the mesentery must be recognized at the present time as positive contraindications to a radical operation. With few exceptions the transgression of this rule in cases in which the patients survived the immediate effects of the operation was followed by an early recurrence of the disease to which the patient rapidly succumbed. Palliative operations in cases of malignant obstruction of the intestinal canal above the rectum, by establishing an anastomotic opening between the intestines above and below the obstruction, have become recognized procedures in surgery. In establishing such a communicating opening, the employment of mechanical devices, such as the metallic buttons of Murphy, Ramaugé and Chaput, which must pass the intestinal canal unchanged, is a procedure fraught with more or less danger, which is being

recognized more as the experience with them increases. In my own practice I have largely dispensed with the perforated decalcified bone-plates, and now rely more frequently on the needle and thread in performing such operations, and the mass of the profession is in accord with this practice. The custom followed by many American surgeons to remove the appendix in all cases in which a diagnosis of appendicitis is made, is a very harmful one. The removal of the appendix should be limited to those cases in which, during the first attack symptoms arise which portend danger to life and relapsing appendicitis. Some cases of appendicitis yield to medical treatment, and in a large percentage of such cases the patients remain free from a second attack. Pancreatic surgery at the present time is limited to the treatment of cysts by establishing and maintaining an abdominal fistula until the cysts become obliterated. The extirpation of pancreatic cysts and partial pancreatectomy for malignant disease are operations fraught with danger, and do not come within the legitimate limits of the art of surgery at the present time. Much has been done of late in the way of developing and enlarging the sphere of the surgery of the liver and biliary tracts. Recent clinical experience and the results of experimental research have shown that a considerable portion of the liver can be removed for injury or disease with a fair expectation of success. The treatment of gunshot and stab wounds of the liver by laparotomy and suturing or tamponing of the visceral wound has yielded encouraging results. A number of successful cases of excision of isolated adenomatous tumors of the liver have enriched and graced our modern surgical literature. The operative removal of malignant tumors of the liver is an undertaking far beyond the present limits of the art of surgery. The successful treatment of abscess of the liver and echinococcus cysts by direct surgical intervention is generally recognized as one of the greatest achievements of abdominal surgery. The pioneer work of Sims and Kocher in laying the foundation for a rational treatment of impacted gallstones in any part of the biliary tracts has yielded unexpected results, and has been the means of saving thousands of lives by averting the dangers from perforation and cholemia by a timely surgical intervention. The removal of calculi from the gall bladder can now be accomplished with very little danger to life. The cystic and common duct the seat of an impacted calculus are now exposed and incised, the calculus extracted and the wound sutured or drained, with a well-founded hope that the patient will recover, and that the operation will result in restoring the free flow of bile through the biliary passages. I have reason to believe, however, that the surgery of the biliary passages has been carried too far. That unnecessary operations have been performed upon the gall bladder and the biliary ducts, no one will deny. The simple fact that a patient is suffer-

ing from gallstones does not furnish a positive indication for surgical interference. The physician and nature's resources should be given a chance, and the surgeon's services should be limited to those cases in which positive indications for operative treatment present themselves. The surgeon who recorded the first successful case of cholecystotomy has since become the victim of gallstones, but instead of calling upon one of his colleagues to open the gall bladder and remove the stones, he made a pilgrimage to Carlsbad and was promptly relieved of his sufferings. Cholecystenterostomy should only be performed in cases in which the common bile duct is permanently occluded by an impacted irremovable gallstone or cicatricial stenosis. Catheterization of the cystic and common bile ducts preceded or followed by dilatation by the use of laminaria tents in the treatment of impacted stones and cicatricial stenosis after the formation of a gall bladder fistula is a much neglected part of the surgery of the biliary passages and of sufficient importance to invite new trials and investigations. For substantial reasons abdominal nephrectomy and nephrotomy have been supplanted by lumbar operations. The treatment of tubercular hydrops of the peritoneum by incision, drainage and iodoformization remains in favor with the profession, and continues to yield the most satisfactory results.

Organs of Generation.—The greatest onslaught of modern surgery has been upon the organs of generation, male and female. It is somewhat strange that the organs created for distinguishing the sex and for the increase of the human species should have been singled out as innocent objects of so-called modern aggressive surgery. The future historians who will record the work of many gynecologists belonging to the present generation will have reason to express their surprise at what disasters the art of surgery has produced when plied in cases far in advance of a scientific foundation. Here and there we hear a feeble voice protesting against the indiscriminate surgery upon the organs of generation of the opposite sex, but the mutilating work continues in spite of such opposition and well-meant advice. Every competent and honest gynecologist knows that in his sphere the art of surgery has been thoroughly abused. It is difficult to assign tangible reasons for such a fearful state of things. It appears to belong to the spirit of the present generation, the outcome of ceaseless unrest in pelvic surgery. When I arraign the gynecologists before this body composed of representative medical men of this country for innumerable and inexcusable transgressions of the rules which ought to govern and control the art of surgery, I do not include the scientific, honest, conscientious workers in that department of surgery, but my remarks will apply to a class of routine operators which has recently grown to

alarming dimensions not only in this but in nearly every country which has been penetrated by the dim rays of so-called bold surgery. It is a subject that I would gladly pass over in silence, but you have imposed upon me a trust which I cannot ignore and I stand here in the capacity of the conservative element in these days of wild, unfounded surgery to place myself on record in protesting against the unnecessary mutilation of the sexual organs of either sex, willing to stand or fall by the sentiments of the great mass of general practitioners, which after all must be regarded as the backbone and final tribunal of our profession. The new generation of doctors finds no longer satisfaction in practicing their profession in some rural district. The young practitioners have their eyes on large cities and have heard of enticing fees paid to specialists for insignificant operations. Why buy a horse and saddlebags when a fortune awaits them in devoting themselves to a specialty, more particularly gynecology? The recent graduate or the man who has become disgusted with country practice seeks a much employed gynecologist, follows his work for a month or two and returns to his prospective field of labor a full-fledged specialist. He is now ready to extirpate the uterus, remove ovaries and Fallopian tubes, sew imaginary lacerations of the cervix and perineum. Do you suppose that such an aspirant for gynecologic fame ever examines a woman and finds her perfect? Is it not true that in nine out of ten cases he finds something to mend? That my views are real and not visionary let me relate a few instances. A number of years ago a young lady accompanied by her grandmother applied to me for treatment for a neurasthenic affection. I was informed by the grandmother that a few days before they had consulted a young gynecologist, who made a hasty vaginal examination, looked wise and informed them that he had found the source of all trouble in the form of a laceration of the cervix, which would require an operation. As a matter of course the grandmother asked for an explanation of the injury and was promptly informed that it was one of the common accidents of childbirth. As the patient was unmarried and had never been pregnant this explanation proved unsatisfactory to the interested parties and no arrangements were made for the prospective trachelorrhaphy—upon a virgin uterus. Not long ago an unmarried woman came under my care who had been told by an ambitious gynecologist that she was suffering from a myoma of the uterus which would necessitate a vaginal hysterectomy. I found a sharp antelexion, the anterior wall of the uterus being prominent and somewhat edematous had been mistaken for a tumor and nothing short of a hysterectomy would satisfy the operator. This patient recovered under conservative treatment without the loss of an important organ. The cases which I have just cited escaped mutilating operations by doubting the diag-

nosis of those to whom they first applied for treatment; others are less fortunate. Suffering woman will believe in and submit to almost everything. In fact it has become almost a fashion for a woman suffering from real or imaginary affections of the genital organs to consult a gynecologist as regularly as her dentist or dressmaker. Not long ago a girl 18 years of age was brought to me with the information that she became epileptic when 7 years of age, that later, when menstruation was established, the attacks never occurred during the menstrual period, and yet both of her ovaries were removed by a gynecologist. As could be expected, the epilepsy remained and when I saw her she was on the verge of insanity. Time does not permit to cite additional illustrations showing criminal trespass upon the legitimate limits of the art of surgery in the treatment of real or imaginary ailments of the female organs of generation. Every practitioner has seen such instances as I have cited above. Has humanity been the gainer since the gynecologists became surgeons? This is a timely and serious question. Is the average woman who has passed through the hands of one or more gynecologists physically and mentally in a better condition than our mothers of fifty years ago, whose ovaries were safe and who knew but little about speculums and vaginal douches? Let the older members of our ASSOCIATION answer this question. When the venerable and distinguished Emmet devised his operation for laceration of the cervix he pointed out clearly what conditions called for and were benefited by trachelorrhaphy. The operation was received with enthusiasm and everyone present here knows how much it has been misapplied. It is safe to assert that not one in ten cases that have been operated upon was the operation justifiable or proved of any benefit to the patient. Emmet's teachings and practice were in consonance with sound pathologic principles, but hundreds of imitators were less discriminating in the selection of cases, and performed the operation simply because they found a laceration of the cervix, irrespective of the existence of symptoms which could be referred to this condition. Laceration of the perineum is another favorite subject of the "amateur" gynecologist. The extent of laceration and the symptoms caused by it are not always taken into careful consideration in deciding upon the propriety of an operation. To "do a perineum" in five to seven minutes still serves as an attraction for the lookers-on in many private hospitals and gynecologic clinics. I fully appreciate the value of a well-performed perineorrhaphy in proper cases, but I am equally well satisfied that the operation has often been performed unnecessarily, and that it requires more than five or seven minutes to perform it properly. The late lamented Robert Battey opened a wide field for operative gynecology. This modest, honest worker conceived the idea that the removal of the nor-

mal ovaries would become a useful surgical resource in the treatment of certain nervous affections which before had baffled the skill of physicians. It required some time and the additional support of Hegar and Tait for his views to become popular among his colleagues. Battey lived long enough to learn that his example and teachings have created a wave in the misapplication of the art of surgery which to-day remains mountain high, and it is difficult to tell where it will end or where a rock sufficiently high and strong will be found to break its force. The frequency with which women are being castrated to-day is one of the most flagrant transgressions of the limits of the art of surgery. It is not unusual for one operator to exhibit from five to six normal ovaries as the result of half a day's work. All kinds of excuses are made for this kind of surgery. The ovaries are too large, cirrhotic, cystic, or perchance a ruptured Graafian follicle is discovered, when he consoles himself that he has removed an apoplectic ovary. Where is this wholesale unsexing of our female population going to end? The beginning of the end has come. The army of women minus their essential organs of generation is beginning to raise its voice against such mutilating work. The number of women who willingly sacrifice their ovaries to restore their shattered health without securing the expected relief has increased to an alarming extent. This sad experience has made the gynecologists more desperate and bold. They have been importuned by their castrated, tubeless patients to such an extent that the art of surgery was again resorted to. The uterus, which heretofore had been comparatively safe, was now selected as the offending body, and vaginal hysterectomy became at once a popular operation. Many atrophic uteri remaining after removal of their appendages have been removed in a vain hope of securing permanent relief. Vaginal hysterectomy for diseases other than carcinoma is now at its height. The uterus is being removed for hypertrophy, endometritis, flexion, version and minute myofibromata. This important organ is no longer safe if it is in the vicinity of a pelvic abscess. Perchance a healthy uterus is removed under the pretense of securing a more direct route to a focus or foci of pelvic inflammation. It is needless to say that most of the surgeons who clamor for the removal of the uterus through the vagina for insignificant affections or inflammatory lesions of adjacent parts, do so by the use of compression forceps. It is no great surgical feat to squeeze out an inflamed or displaced uterus between compression forceps. It is difficult to say where this rage for the removal of the female sexual organs will end or what organ will be the next battle ground for the aggressive gynecologists. The clitoris, the vagina, the cervix uteri, the ovaries, the Fallopian tubes, the uterus and its liga-

ments have successively passed through a trying ordeal of the furor operativus. What the next fad will be is impossible to foretell. As one operation after another is falling into a well-deserved desuetude new ones will have to be devised to gratify the whims of the patients and the ambitions of the gynecologist. I have portrayed to you only a few of the excesses of the art of surgery as applied to the female organs of generation, but enough has been said to show you that it is time to call a halt. Further depredations can best be avoided by the general practitioners to whom most of the patients apply for relief. Let them do their duty toward their patients. Many of the minor affections of the uterus and its appendages are within the reach of intelligent general and local treatment without a recourse to the knife. If gynecology is to live and become a real benefit to women suffering from pelvic disease, it must become more conservative. We all appreciate what surgery has done in prolonging life and in mitigating suffering in the treatment of ovarian cysts and the removal of the uterus, the seat of symptom-producing myofibromata. What I am objecting to, and on good ground, is the indiscriminate operating upon the female organs of generation for imaginary or insignificant affections. This is an evil that must be apparent to all and that the leaders of gynecology must assist us to suppress.

I cannot dismiss the subject of genital surgery without making a strong plea in favor of conservatism in the treatment of prostatic hypertrophy. A few years ago J. W. White made a series of experiments on dogs which proved that the testicles possessed an influence which, to a certain degree, controlled the nutrition of the prostate gland. His experiments were made on dogs, the animals being vigorous and in full possession of their sexual power. He found that castration was constantly followed by progressive atrophy of the prostate gland. At that time he timidly suggested that castration in cases of prostatic hypertrophy might possibly prove to be a valuable surgical resource in the treatment of urinary obstructions due to such a cause. About the same time Ramm gave the result of his clinical experience, covering about the same ground, urging the utility of castration as a legitimate surgical procedure in the treatment of non-malignant obstructive enlargement of the prostate, a condition so frequently met with in men advanced in years. You are familiar with the subsequent history of this operation. Numerous operations have been performed in different countries which appear to support the claims made for it by both of these investigators. The operation has been modified in substituting for the castration section or resection of the vas deferens, and recently neurectomy of the spermatic nerves; both of these procedures are said to produce the same curative effect as castration. A sufficient clinical

material has accumulated to prove that these different procedures frequently result in diminution in the size of the prostate and that the symptoms caused by the obstruction often diminish or disappear.

I can readily understand in what manner emasculation in young animals and young and middle-aged men should be followed by atrophy of the healthy prostate gland. Castration of women during active sexual life will bring about atrophy of the uterus as a constant result. Clinical experience has also shown that the anticipated menopause effected by castration has a decided effect on the myomatous uterus. But who would think of castrating a woman who has reached the menopause for such an indication? It is very difficult to understand how castration or its substitutes performed on men advanced in years, with atrophic dormant testicles should exert such a positive influence upon an organ, the seat of a senile affection. And yet, the fact remains that many reliable men have observed such results, and we can no longer doubt them.

What I fear, and the reason I allude to this subject, is this, that castration of aged men for hypertrophy of the prostate, when this operation becomes common property and is endorsed by surgeons who stand high in the estimation of the profession, will be misapplied in the same way, fortunately, probably to a lesser extent than the removal of normal ovaries. Men will be castrated for stone in the bladder, chronic cystitis and malignant disease of the bladder. It is not always easy nor possible to make a positive differential diagnosis between simple hypertrophy of the prostate and some of the conditions which simulate so closely. In doubtful cases it appears to me it would certainly be advisable to make the diagnosis sure by a supra-pubic cystotomy before resorting to a mutilating operation, rather than remove the testicles and later discover a tubercular bladder or encysted stone or malignant disease of the bladder or prostate. Castration is such an easy operation that every tyro in surgery will be tempted to perform it upon willing subjects suffering from obscure affections of the bladder, complicating hypertrophy of the prostate gland. The Ramm-White operation deserves a fair trial at the hands of competent surgeons, in well-selected cases, but I apprehend evil in the future, not so much from the proper use as the abuse of this procedure. In short, it is probable that this new surgical resource, which has not yet passed the trial stage of a legitimate established surgical procedure, will on a smaller scale become a repetition of the unenviable history of castration of the opposite sex. We have every reason to believe that so far the apparently successful cases have found their way into current medical literature, while the cases in which the operation has proved a failure, with few exceptions, have for apparent reasons not been published.

Gentlemen: It has been my purpose to call your attention in the brief time allotted to the delivery of this address to some of the limits of the art of surgery and to a few of the most flagrant prevalent trespasses of its legitimate limits by indiscriminating surgeons. I wish time would permit me to say something of the too frequent recourse to the recently revived operation of symphyseotomy and the unwarranted procedure known as Porro's operation, except in cases in which the uterus is the seat of a life-threatening affection, some of the evil results following the too frequent performance of ventro-fixation of the retroverted uterus, and many other topics in general surgery and gynecology to which no allusion has been made, where the limits of the art of surgery have been ignored, and too often reckless operating has disgraced the fair fame and reputation of our noble profession. Let us have in the future more of the *nil nocere* in place of the *furor operativus*. I have written and delivered this address with malice toward none, in the interest of the suffering portion of our population, for the true advancement of the science and art of surgery, and as a plea for recognition of the good work done by the great mass and backbone of our profession, the modest, toiling, inadequately remunerated general practitioner.—Journal of American Medical Association.

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PROCEEDINGS OF SOCIETIES.

CINCINNATI OBSTETRICAL SOCIETY, JANUARY 9, 1896.

Presentation of Instruments.

Dr. Palmer: It is perhaps known to most of you that I designed a uterine dilator some 15 or 18 years ago. Since then I have never employed anything else to dilate the cervix uteri, either in the pregnant or non-pregnant state. I have found the instrument so easy of use, so thorough in execution, that I am well pleased with it. These dilators I know have been used by many other persons: they are for sale here in Cincinnati, and are shown in Pozzi's work, and in the Thomas-Munde's book. It is intended that the blades of the instrument should be perfectly parallel during dilatation. I have always used these instruments in this way: first, insert them in the normal uterine axis, dilate from side to side, then from front to rear, and then obliquely to the right and obliquely to the left. I have again and again observed the dilatation is about as symmetrical as if performed with a three-bladed or a four-bladed instrument. I have recently designed a No. 3 instrument, much thicker and larger than the others. When the blades of the No. 3 instrument are

expanded they produce dilatation to the extent of one and one-half inches from out to out. I used this last instrument, No. 3, one time at the Cincinnati Hospital before the class to explore the uterus, and it disclosed to me a large intra-uterine fibroid, fit for operation. I have had occasion also to use it in a case of pregnancy in which dilatation was very slowly accomplished, because of a long conoid-shaped cervix uteri. It seems to me it can be used for obstetrical work as well as for gynecological work.

Uterine Irrigator Tube.—The other instrument, this intra-uterine irrigator, it seems to me is well adapted to wash out the uterus. It has the advantage that none of the fluid can be retained. The danger in washing out the uterus is not from irritation of the medicament or fluid used, but from some of the fluid being retained. This instrument has a number of grooves so arranged that it is impossible for the fluid to be retained. I use the instrument before curetting and always after curetting, so the operation is made perfectly antiseptic.

Discussion of Dr. Palmer's Instruments.

Dr. Wenning: I have had some experience with Dr. Palmer's dilators, having used them quite extensively, especially the smaller dilator. This dilator is an improvement in some respects over the first dilator devised by him, yet there are some points, it seems to me, not favorable for its employment. For instance, the ring of scissors' handles which are not on this instrument but were retained in the form first devised by Dr. Palmer are preferable because with them the instrument is held in better control; if they are omitted it seems to me there ought to be some other kind of handles with which we can guide the instrument. In the large pattern I would prefer heavier handles because, when the blades are heavy, the instrument can be more easily introduced if you have some weight to counter balance it at the other end. In the latest form devised it would also be well if it had some guard to prevent it from being jammed too suddenly into the uterus and going beyond the part intended to dilate. These points of course are only personal. When I wish to dilate, for instance for retained secundines, when the uterus larger than normal, I use either Sims' three bladed instrument, or Wylie's modification of Sims', both of which have powerful handles enabling a firm grasp. Then, further, it seems to me these instruments should be separable so that they can be more easily cleaned.

Dr. Bonnfild: Mr. President, I agree with the last speaker, that it would be better if this instrument had a handle which you could grasp firmly. It has been my practice to dilate with my hand and then

put on the screw and hold the dilator in position. When you notice the cervix is beginning to tear you can release the dilator very suddenly, so the tear will not be so great as if you have to loosen a screw. I would prefer a dilator with a handle like Goodell's Erlanger.

Dr. Stanton: I like the size and shape of the instruments presented very well. My own preference, however, is for an instrument with a greater number of blades—the more the better. I like, for instance, four blades, and think there is less danger of traumatism than if the dilatation is effected with two blades.

Dr. Palmer: Gentlemen, my first instruments had the ring and ordinary handle. Having used that for several years I found it could be dispensed with, particularly since this instrument had the screw attachment, and it simplified the instrument somewhat and made it more economical. I have always claimed that the screw part of the mechanism is a great advantage over any dilatation which can be secured with the hand, because it is more slow, gradual, uniform, easy and less liable to effect laceration. You can quickly turn the screw backward if it seems to be producing laceration. I have never with any of these seen any tear take place. I have been astonished at the dilatation which could be secured if it is done slowly.

Now, as to three or four blades. With the two-bladed instrument, dilatation is first secured laterally, then antero-posteriorly, then obliquely to the right and obliquely to the left, by which means a uniform circular dilatation is secured. You will be surprised when you withdraw the instrument how circular the dilated os will appear.

Dr. Wenning: I perfectly agree with Dr. Palmer, you achieve greater dilatation with two blades than with four; and with the four-bladed instrument you are more likely to cut the tissue than with the two-bladed instrument. So I think really the two-bladed instrument is safer. Now, as to turning the dilator in different directions, I think that is a good plan if the curve is not too great, for then I think you are likely to displace the uterus too much laterally and thus might do injury, but a slightly curved instrument can with ease be turned in opposite directions without doing injury. The two-bladed instrument then would answer all purposes.

Dr. Palmer: With this instrument you simply introduce it with the left hand and turn the screw with the right hand. I can see no need of the rings in the handle.

Dr. Bonnifield: Don't you find, doctor, that a pretty rigid uterus has a tendency to force the dilator out?

Dr. Palmer: Yes; of course, the dilator should be placed up as far as necessary, and held there, and at the same time you hold the uterus down with the volsellum. When you dilate, you should always seize the cervix uteri with volsellum.

Dr. Bonnifield: But you have to make upward pressure with the dilator as you make downward traction with the volsellum.

Dr. Palmer: I suppose you have. Now, as to the action of the shoulder. That I considered, and I at first directed the shoulder to be put on, but then had it taken off, because it looked bungling. We, of course, always use the sight in the employment of this instrument. You can readily see how far it is in the cervical canal. Of course, if it is a very small cervical canal, you would follow the No. 1 instrument with the No. 2, but usually the No. 1 can be followed with the No. 3.

Dr. Robert Stuart: This question of uterine irrigation has interested me a good deal, and I have been impressed with the utter inadequacy of the ordinary uterine irrigators. This seems to be as little objectionable as anything we have, but then, I would be afraid, unless there was considerable dilation of the uterus, that there would be from the washing of the uterus above, a crowding of the detritus or scrapings around the instrument in the neck of the womb, and consequently a damming back of the water into the uterus itself. I have never been able to understand why it was necessary to use anything except a tube through which the water enters the uterus, except to be certain the cervix is sufficiently dilated when there can be no retention. This instrument, while it would permit the water to escape, at least, at first, would, it seems to me, be clogged with the scrapings as a stream with brush. It seems to me much better, however, than anything else I have seen.* But practically I have never had any difficulty in washing out the uterus with an ordinary fountain syringe. The great difficulty then is that you generally have a rigid and straight tube, the straightness of the tube being the principal objection. But with a slightly curved rubber tube with openings in the side it seems to me we can do better than with one of these metal instruments. The rubber instrument changes temperature more readily, and with it you are not so likely to punch holes through the uterine wall. That is the principle I have acted upon, and if it is wrong I would like to be corrected. With an ordinary fountain syringe and a slightly curved hard rubber tube you can readily irrigate the uterine cavity, provided you have sufficient dilation of the cervix. The great advantage of that, if the point be well taken, is that it saves the use of one instrument.

Dr. Stanton: A word in regard to the danger of introducing air into the uterus. If it is so dangerous carried through a syringe, why isn't it as dangerous when introduced through a dilator?

Dr. Wenning: I think the danger of air is when it is forcibly injected into the uterus and cannot leave the uterus again. I think, for instance, if with a tube you were to force air into the uterus, it would do damage.

Dr. Stanton: But will air escape when water does not?

Dr. Wenning: Yes; but suppose you were to introduce water into a uterus with a Davidson syringe when the uterus is not dilated, then it would likely do damage. But I think when the sinuses are not open, as in the puerperal uterus, there is no danger, and I think then you can introduce any nozzle and do not need a reflux catheter for that purpose. I have done it repeatedly in hospital work and never have seen any ill effects. But the instrument does not always act as a reflux. I had an example when I used Skeens catheter to wash out the urethra and used a reflux tube to let out the water so it would not go into the bladder. But I found I had to introduce a tube and let the water out of the bladder. The openings into the reflux tube were plugged and the water could not pass out. I think it is a very nice idea, but not very practicable. I think this instrument will act better than the other reflux catheters, but I do not think we could operate without providing sufficient dilation for reflux.

Dr. Bonnifield: I have never owned a reflux catheter and have never used one except when I was working for somebody else and had to. But I think sufficient traction should be made with the volsellum to straighten the cervical canal. When the uterus is considerably antiflexed, the internal os makes quite a valve and will retain considerable water, but by making a little traction on the anterior lip you straighten the curve and the water can flow out without any trouble at all. If one did need something to keep the cervix open, I can conceive no better instrument than the one presented this evening.

Dr. Robert Stewart: Don't you think in case there is a sharp antifixion of the uterus, it would be impossible to get that instrument in without cutting, but if you could get the long nozzle of a fountain syringe in the opening it would overcome the antifixion sufficiently?

Answer: It would straighten it considerably, but not sufficiently.

Question: If you make very much traction with the volsellum would not you peel something off?

Answer: Well, one must be careful both as to the amount of traction and as to the forceps he uses. There are forceps and forceps. But I do not think the danger is so great in the puerperal uterus; the pregnancy will have gotten rid of that feature largely.

Dr. Jones: Mr. President, there are two dilators here. The lighter one will do for almost all work and be all that is necessary. In the other one we have a powerful machine, and, to my mind, it is not guarded sufficiently. That is to say, although it is well enough to have a screw for it, I think it would be better with fewer threads to the inch and the handle of the screw made larger, so it could be struck, and, with a little force to release it, it would travel quickly to the hand by its weight.

There is one thing to be taken into consideration in regard to the uterus which I do not think is recognized as a rule, and that is, the uterus is not symmetrical as far as the integrity of the tissue is concerned. There is a difference between the right and left side in many cases. Even with a uterus supposed to be strong and firm, an instrument of this kind, if put in without a possibility of sudden release, may do damage. Therefore, it would be better if it were arranged the same as Goodell's instrument so you could suddenly release the screw; and the screw ought to be made heavy, so the slightest touch of the finger would carry it to the hand. It would then be a much safer instrument. I can see where such an instrument could be used, and there are times when it is absolutely necessary to have this weight, but having tissue requiring the power in this instrument it would be better to have it guarded with elongated handle and the heavier screw.

Dr. Palmer: It will be found in practice that the No. 3 instrument will be needed very seldom. I think I have used it in but three cases. I first saw the need of it in obstetrical practice, which induced me to design this instrument. There are cases of concealed accidental hemorrhage in obstetrical practice, and cases of foreign bodies in the uterine canal, which contrary to the usual rule, do not create dilatation of the cervical canal below, but call for artificial dilatation. Then, I have never seen any difficulty from the use of this instrument. I cannot see why the turning of this screw cannot be made sufficiently slow to prevent the instrument doing harm.

In my commencing gynecological practice, I was on theoretical grounds disposed to inject the uterine cavity pretty often, because it seemed to me better for intra-urine medication; but I had such bad results I discontinued it speedily. I now never inject the uterine cavity unless there is a fair amount of cervical dilatation. I am fully convinced that the bad results do not occur from the passage of the fluid through the Fallopian tube, because on the cadaver I have found it impossible to force fluid through the Fallopian tube. Neither do I think the bad results come from the passage of the fluid or air into the system at large; but I think they are due to the sudden distention of the uterine cavity, and the inability of that cavity to relieve itself promptly. You can inject fluid, although irritating and mixed with air, and if it can get out readily there will be no harm. So, if you take a glass tube and wash out the uterine cavity. After well dilating the cervical canal, it may suffice. The irrigator, however, I devised before I came to this conclusion. By it, the free return current is so quickly and so absolutely secured, that I feel more secure with its use.

Dr. Jones: You don't claim to be the originator of the ideal embodied in that instrument, do you?

Dr. Palmer: The idea of this instrument was taken from George R. Patton. He designed an instrument something like it for washing out the urethra in the treatment of gonorrhea. But this instrument was objectionable because he had the bearings soldered on, which rendered it difficult to keep clean. You will see that this instrument is without that objection in that it has not the shoulders and the cavities, to be kept clean.

Dr. Wenning: Isn't Skene's recent urethral catheter on the same plan?

Answer: Yes, sir.

Symphyseotomy Knife.

Dr. Palmer: I have never made symphyseotomy on the living subject. I have made it twice on the dead subject, but as yet have never found it necessary to perform the operation on the living subject. I believe symphyseotomy has a field of utility, but I believe that field is a narrow one. It seems to me considerable strength is often required in making the operation. Once on a dead subject I found it impossible to get the knife through the symphysis, because the symphysis was so ossified. That is the reason I have changed the shape of the blade and have given it a stronger, more honest handle, and the tractor on the handle, so when the knife is pushed behind the symphysis pubis you may use greater strength if needed.

The annual meeting (the twelfth) of the Fifth District Branch of the New York State Medical Association, which was recently held in Brooklyn, was a pleasant and profitable one. The papers read were, as a rule, of a high standard of excellence, and the discussions they elicited interesting and instructive. As usual at these meetings there were two sessions, a morning, and an afternoon one, and in the interval a pleasant hour devoted to a collation and to social intercourse. At the morning session the President, Dr. J. R. Vanderveer, of Monroe, Orange County, delivered his address, and the regular business of the Branch was transacted; after which biographical sketches of several members deceased during the year were read. The only scientific paper presented at this session was a valuable one of Dr. George W. Newman, of Brooklyn, on "The Effects of Reflex Irritation on the Temperature and Pulse of Young Children."

The afternoon session was opened by a paper on "Latent Mastoid Disease," by Edward Fridenberg, of New York. In it he said that while in the great majority of cases the diagnosis of such disease was made without much difficulty, not a few instances occurred in which it remained for a long time undetected, owing to an entire absence of symptoms, either local or general. He recited four illustrative cases, and

in his concluding remarks said that the lesson which he wished to inculcate was, that in any case in which a purulent discharge from the ear continues for some time in spite of treatment, or in any case in which there is found drooping of the posterior superior wall of the canal, the presence of mastoid disease should be suspected. The full and able discussion of this paper was opened by the distinguished Dr. Arthur Mathewson of Brooklyn, who was present as an invited guest.

It was followed by a very suggestive one on "Enteroptosis," by Dr. Max Einhorn of New York. In the course of it he made the statement that out of 92 female patients treated by him in two months for digestive troubles, 32 or 34 8-10 per cent., were the subjects of ptosis of the stomach and intestines, with movable kidney. Out of 141 male patients treated in the same time for the same class of troubles, only 9, or 6 2-10 per cent. suffered from enteroptosis. He regarded the use of the corset as the principal etiological factor in females, and advised a properly adjusted abdominal bandage as one of the first requisites for successful treatment.

One of the papers of greatest practical value was that by Dr. Charles E. Lockwood, of New York, on "The Diseases of the Skin Observed in a General Practice of Twenty-five Years, and their most Effectual Methods of Treatment." In it Dr. Lockwood expressed the opinion that in the curriculum of the medical schools the subject of dermatology did not receive nearly as much attention as its great practical importance entitled it to. As the skin was the great signal board on which Nature gave notice of both external and internal sources of irritation, he thought it highly necessary that any practitioner should be familiar with the phenomena presented by the various forms of skin affections. In his studies of diseases of the skin he said that he had relied principally upon the classification of Tilbury Fox, and also that he had been greatly aided by keeping a careful record of all his cases. Dr. J. McF. Winfield, of Brooklyn, in discussing the paper, agreed heartily with Dr. Lockwood in the main, but took exception to Fox's classification, which he regarded as somewhat antiquated at the present day. Thanks, he said, to the labors of Nuna and Caposi abroad, and of Hyde, Duhring, Piffard and others in this country, this difficult matter had been greatly simplified and elucidated. Every specialist in dermatology, in order to be successful must, he thought, be a good general practitioner, and the specialists were always glad to learn something from their brethren in general practice.

The last paper on the programme was one on "The Comedy of Errors in the Technique of Modern Operative Surgery," by Dr. Edward Von Donhoff, of New York. In it he referred with humorous satire to the various fads which had from time to time come in vogue in the surgical world, and dwelt upon the absurdity of blindly following any new suggestion or device, simply because it was the fashion.

ABSTRACTS.

Morning Diarrhoea.

In the Medical Record of May 11, 1895, Delafield states that he treats this condition as follows:

If the disease occurs in women, before beginning any medical treatment it is important to have cured any lacerations of the perineum or the cervix, displacements of the uterus, or disease of the Fallopian tubes which may exist. The methods of treatment which are ordinarily employed are:

1. Change of Climate.—The effects of this are often very satisfactory and in the milder cases very prompt. A person who has a morning diarrhoea for months may leave New York in the afternoon and the next morning begin to have formed passages. Unfortunately, a return to the city may be followed by a return of the diarrhoea. In the more severe cases a prolonged residence in a dry inland climate may effect a cure.

2. Diet. The plans of diet usually followed are: (a) an exclusive diet of milk; (b) an exclusive diet of beef and hot water; (c) a diet composed of milk and meat alone; (d) a diet from which only the sugars and starches are excluded.

As regards the effects of treatment by diet, we find that some patients are cured, some are benefited for a time; in some there is no effect at all; some get worse.

3. In a small number of cases the diarrhoea can be cured by daily lavage of the stomach.

4. Drugs. As a rule, the number of the passages can be checked for a moderate length of time by the preparations of opium. The improvement only lasts while the opium is taken, and it is evident that the use of this drug ought not to be continued for any length of time. The subnitrate of bismuth, the subgallate of bismuth, and B-naphtol bismuth are said to give good results. The writer has not been very fortunate with them. Salol and naphtalin answer well in some cases, but have absolutely no effect in others. Arsenic, quinine, ipecac, belladonna, and cannabis are all very useful drugs. The drug which has given him the best results is castor oil, in doses from 5 to 10 drops.—Therap. Gazette.

RELATIONS OF MEDICAL EXAMINING BOARDS TO THE STATE; TO THE SCHOOLS AND TO EACH OTHER.

Dr. William Warren Potter, of Buffalo, president of the National Confederation of State Medical Examining and Licensing Boards, chose this title as the subject of his annual address at the sixth conference of this body, held at Atlanta, May 4, 1896.

He said there were three conditions in medical educational reform on which all the progressive physicians could agree—namely, first, there must be a better standard of preliminaries for entrance to the study of medicine; second, that four years is little time enough for medical collegiate training; and, third, that separate examination by a state board of examiners, none of whom is a teacher in a medical college, is a prerequisite for license to practise medicine. It is understood that such examination can be accorded only to a candidate presenting a diploma from a legally registered school.

He further stated that a high school course ought to represent a minimum of academic acquirements, and that an entrance examination should be provided by the state for those not presenting a high school diploma or its equivalent.

He did not favor a national examining board, as has been proposed, but instead thought all the states should be encouraged to establish a common minimum level of requirements, below which a physician should not be permitted to practice; then, a state license would possess equal value in all the states.

In regard to reciprocity of licensure, Dr. Potter thought it pertinent for those states having equal standards in all respects to agree to this exchange of inter-state courtesy by official indorsement of licenses, but that other questions were of greater moment just now than reciprocity. Until all standards were equalized and the lowest carried up to the level of the highest, reciprocity would be manifestly unfair.

He urged that the states employ in their medical public offices none but licensed physicians. This, he affirmed, would tend to stimulate a pride in the state license, and strengthen the hands of the boards.

He denied that there was antagonism between the schools and the boards, as had been asserted. He said that both were working on parallel lines to accomplish the same purpose; that there could not possibly be any conflict between them, and that they were not enemies, but friends.

The medical journals of standing from one end of the country to the other, he affirmed, were rendering great aid to the cause of reform in medical education, and the times were propitious.

He concluded by urging united effort by the friends of medical education, saying that "the reproach cast upon us through a refusal to recognize our diplomas in Europe cannot be overcome until we rise in our might and wage a relentless war against ignorance, that shall not cease until an American state license is recognized as a passport to good professional standing in every civilized country in the world."

At the meeting of the British Medical Association in August, 1895, Herbert Snow, M. D., Surgeon London Cancer Hospital, spoke of Loretin, the new surgical powder, as follows:

"My own experience is confined to the powder which I have never found occasion to mix with any other substance. Dusted over the skin, or over a granulated wound, this causes not the slightest irritation or unpleasant sensation. It immediately destroys the malodor of the most fetid cancerous sore, controlling this in a manner which no other agent I have yet tried will do. Copiously puffed with an insufflator into the deep cavity formed by evacuating the axilla of carcinomatous glands, it efficiently precludes suppuration, even when free hemorrhage has taken place after the closing of the wound, an occurrence almost inseparable from anesthetic vomiting, when the patient has been removed from the operating table. Not the slightest symptom from its employment in this way has so far been detected. When there is no deep cavity, a wound dusted with Loretin heals rapidly by first intention. I have had recourse to Loretin in some sixty cases, mainly operations on breasts and axilla, notoriously a test region for antiseptics. In my hands it has proved an ideal antiseptic and deodorant, with no single drawback; and I am sure that no surgeon who has once tried it will again resort to the noisome and toxic iodoform, from the free use of which I have seen more than one death. Though when old and established agents answer the purpose sufficiently, I have a strong prejudice against novelties, yet this substance, non-poisonous, devoid of smell, and absolutely preventative of suppuration—seemed to me so marked an advance upon anything previously brought forward, that I felt constrained to direct thereto the notice of the Section."

Aphasia in Infancy.

Dr. Thos. F. Rumbold, in an article in the *Atlanta Med. and Surg. Journal* says: Fortunately it is quite rare that nasal inflammation is so excessively severe as to extend into the brain so as to cause a disability of speech. The disability may be only a slowness in learning to speak, or slovenly way of pronouncing words, or the disability may be so great that there may be a total inability to pronounce one word that could be understood by any one save the mother. The subject may never learn to pronounce one word, making himself intelligible only by peculiar inflections of high or low tones, and by laughing and crying. With this disability there is nearly always an atrophy of the bones of the face and mouth-breathing. I have had, since 1871, seven such cases, from seven to twelve years of age—that is, with total inability to speak one intelligible word. It was not the least difficult in each of the cases to trace back to the time when the nasal inflammation, during infancy, was doing its

mischievous; the nasal disease in all of these cases was distinctly remembered by the parents.

That the nasal inflammation extended in these cases, to the third convolution of the brain and the island of Reil—the center of speech—was evident upon close and careful investigation of each case. The auditory nerves were somewhat affected in all the cases, but hearing was not very dull, for all the patients could hear the usual voice at the distance of from two to four feet when their backs were turned to the speakers, and five of them gave abundant evidence of their ability to understand what was said to them. There was evidence of defective hearing in infancy, in the marked projection of the pinna of the ears. The sight on casual examination was perfect. The facial nerves were unaffected as far as could be ascertained by common tests. The sensory nerves were nearly normal, but all the patients had locomotor ataxy to a greater or less degree. Some could not walk at all with a handkerchief over their eyes. Others staggered so that they fell when pushed into a walk. Not one of them would willingly take a single step with a handkerchief thrown over the head so as to cover the eyes. The absence of the ability to speak under these circumstances clearly points to the brain as the organ injuriously affected, and as each one has been in perfect health since their recovery from the severe illness that affected their nasal passages, it shows that the nasal inflammation had extended its injurious influence to the third frontal convolution and the island of Reil.

The Roentgen Rays.

Have proven of service in extrauterine fetation as some "shadowgraphs" shown by Professor Lebedef at a recent meeting of the St. Petersburg Medico-Chirurgical Society show, opening up a new field of use for them. The "shadowgraphs" were taken from a case of uterine gestation at the fourth month. It appears that even at that early age the human bone is impenetrable to the rays, as the "shadowgraphs" are said to have shown clearly the bones of the fetus as well as those of the mother. This method should prove a most valuable additional aid to diagnosis in doubtful cases of extrauterine gestation.—St. Petersburg correspondent British Medical Journal.

Examination of Virgines Intactæ.

The bimanual examination of virgines intactæ should always assume the form of a recto-abdominal palpation. There is no need in these cases of a vaginal examination; the finger in the rectum will teach us all we wish to know concerning uterus, tubes and ovaries. The only difficulty to be overcome is to identify the cervix; a little practice will enable us to master this detail. Edebohls, Canadian Practitioner, in most virgins,

though not all, a fairly satisfactory vaginal examination can be made by approaching the vulva with the index finger creeping over the pubic arch, flexor surface next to the patient, the examiner standing at the patient's side. In this way much information can be gained without rupturing the hymen for

Magnum est Crimen,
Perrumpere Virginis Hymen.

PROTONUCLEIN, A METABOLIC FORCE.

By DR. J. E. WARDEN, Springfield, Mo.

I have used it in more than twenty different cases with absolute satisfaction. Will briefly mention a few cases giving its clinical behavior. The first two cases were typhoid fever, same family, same environments, sick about a week when first seen by me; cases almost identical; temperature when first seen ranged $103\frac{1}{2}$. I placed them at once on small doses of calomel and soda, antifebrine in three-grain doses every one, two and three hours as required to control the fever, with three grains of quinine sulph. every four hours. In addition to this I placed one patient on Protonuclein, three grains every three hours: the temperature of the one placed on Protonuclein never ranged higher than 104 , and on the fourteenth and fifteenth days temperature was 98 to 99 , with marked symptoms of convalescence. The other's temperature gradually increased, ranging from 105 to $105\frac{1}{2}$ —one time 106 , at the sixteenth day, when I gave in addition to the treatment, Protonuclein. In a day and a half to two days, temperature began to gradually decline with a general amelioration of all symptoms, and on twenty-first and twenty-second days there was little or no fever. Both cases resulted in satisfactory recovery.

There next came under observation three cases of malarial fever, from Ft. Smith, Ark. A mother of twenty-seven years, and two children—one of four years, the other, two years and eleven months. Mother taken sick in Ft. Smith came here (her old home). She had been sick about ten days and her physician there thought that Springfield, being her native home, would be beneficial to her as there was an epidemic of malarial fever raging at Ft. Smith at that time. When first seen by me, her temperature was $102\frac{1}{2}$ to 103 . As the physician that had been treating her had prepared sufficient medicine, which she had brought with her, I recommended that she continue his line of treatment. But I prescribed for the children who were suffering from the same malady; one of four years had a temperature of 104 ; one of two years and eleven months, temperature 105 . To each I gave Hydrag. Sub. Mur. and Soda Bicarb., and placed them on Protonuclein; the older, two grains every three hours, the younger, one and a half grains every three hours.

with a local application of Quinine Alk. in Ol. acid, three grains every three hours. The younger had no fever after the third day, appetite good, sleeping and doing well; the older improved more slowly but had no fever after the fifth day, after which rapidly convalesced. All this while the mother was having fever $101\frac{1}{2}$ to 102, complete anorexia, nervousness and insomnia. As her medicine which she brought with her was about exhausted, I placed her on Protonuclein tablets, one every three hours. Her fever in less than a day began to decline and was absent on the second day; appetite improved, nerve tension reduced and she made a rapid recovery.

Have used Protonuclein in three cases of pelvic trouble; first, a lady of twenty-three years, suffering with salpingitis with local peritonitis. I had attended her in previous attacks that required from two and a half to three weeks to recover. The last attack, which was equally as grave if not more so than the prior attacks, I treated with Protonuclein, three grains every three hours, and was able to arrest the trouble in eight days.

Second case. Septicæmia, arising from retained secundines following an abortion. When first seen was having recurrent chills, fever, nausea and vomiting, skin sallow, eyes yellow. I placed her on Hydrag. Sub. Mur. and Soda Bicarb., Quinine Sulph., Sulph., and Phos. Soda. Hot water injections to remove debris from the uterus. Case gradually grew worse, for twelve days, when I gave in addition, Protonuclein every three hours, after which her chills ceased and she gradually recovered on no other treatment than Protonuclein.

Third case. Acute Endometritis following childbirth. Protonuclein locally every day, and a tablet internally every three hours; satisfactory recovery in eight days.

Deep erysipelas and cellulitis in a man of thirty-eight years, following an injury to the face and the neck on the left side; formation of pus in the deep cervical cellular tissue; temperature of 105, delirium, nausea and vomiting. Under the ordinary treatment of Iron, Strychnia, Digitalis and Quinine the patient grew worse. I then placed him on Protonuclein, three grains every three hours, day and night; also hypodermic injections; there was marked improvement at once with a gradual recovery, while we had expected a fatal termination of the case. I have used Protonuclein in the treatment of abscesses with good success; in acute bronchitis and in colds, I consider it excellent. Have used it in two cases of uncomplicated diphtheria, with recovery in six to eight days in both cases. Have used the powder in cases of long standing ulcers with good results; also on extensive burns. The powder excite a new formation of epithelium, and takes the place of skingrafting as in a case I have recently treated—a burn ten or eleven inches wide and

fourteen to sixteen inches long on the back; there was the formation of a new covering in four weeks and patient doing well otherwise.

—Medical Mirror.

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MEDICAL NEWS AND NOTES.

Paroxysmal Headaches Treated by Ergot.

L. Cappellari (Sem. med., 1895, XV, p. ccxxii.) In three cases of periodic headaches, the author had occasion to test the efficacy of ergot, as recommended in this morbid condition by Dr. Thomson.

The three subjects were of a more or less nervous temperament, and had suffered for a considerable time from frequent and violent attacks of headache. The patients gave no history of malaria. Quinine, as well as most of the analgesics and anti-nervines known, had been tried in vain, when Dr. C., resolved to administer ergot. The beneficial effect of the latter soon became manifest. The patients were completely cured of cephalalgia, after having taken daily 4 gme. (1 fl. dr.) of fluid extract of ergot mixed with 12 gme. (3 fl. dr.) of elixir of cinchona, for three consecutive days.

The medicament did not occasion nausea or vomiting, as had been observed by Dr. Thomson in his patients. This Dr. C., ascribes to the fact that he employed three times as much elixir cinchona as fluid extract ergot, while Dr. T. used equal parts of elixir and fluid extract.—

SPECIAL REGULATIONS FOR THE SECOND PAN-AMERICAN MEDICAL CONGRESS, TO MEET IN THE CITY OF MEXICO ON NOVEMBER 16, 17, 18 AND 19, 1896.

ENROLLMENT.

Art. 1. In order to be properly enrolled, each member of the Congress will pay to the Treasurer thereof in the City of Mexico, the sum of five dollars gold.

GENERAL SESSIONS.

Art. 2. There will be one opening session, one closing and one intermediate session of a purely scientific character.

Art. 3. The opening session which will be of a solemn character and presided over by the Supreme authority of the nation, besides being attended by the members of the Congress, will also be attended by the members of scientific societies, and other distinguished persons may be invited. The session will be opened with the report of the General

This will be followed by a speech of welcome, pronounced by the President of the Congress.

Two members will then speak on scientific subjects, and they will be followed by a speech from the President of the Republic. It is strongly recommended that the scientific speeches should be of short duration.

The intervals between the speeches will be filled up with musical performances.

Art. 4. At the closing session, the General Secretary will notify the place designated by the Congress for holding the third meeting.

Art. 5. The Treasurer will present his accounts to the Congress, showing the disbursements made of the funds entrusted to his care.

Art. 6. A scientific speech will be delivered and a short speech by one Representative of each one of the nations attending the Congress.

Art. 7. In the intermediate session, four speeches will be delivered on general matters, by persons who are highly distinguished in medical science, and who, having been in due time invited to do so, have accepted the commission; one of these speeches being pronounced by a Mexican physician, who shall be invited to do so by the Committee of Management.

Art. 8. No discussions will be held in the General Sessions.

SESSIONS OF THE SECTIONS.

Art. 9. These sessions will be held from 9 to 12 A. M. and from 3 to 5 P. M., in the places that may be designated by the Organizing Committee. They shall be presided over by the President of each section, alternating with the Vice-Presidents of each one of the nations that are represented in the respective sections.

Art. 10. The person who may be appointed by the Committee of Organization, will be the ex-officio Secretary of each section, and he will fill his post alternately with the Secretaries of the nations who may be represented in the sections; but should the latter not be present, their places will be supplied by the President in office.

Art. 11. The President will direct the discussion in accordance with the order of the day, and will decide all questions that may arise, and that may not be provided for in these regulations.

Art. 12. The ex-officio Secretary will make out the minutes, and for that purpose, besides his own notes, will collect those of the Secretaries who may have acted in the section. He will also collect from the persons who may have spoken, the written extracts referred to in Art. 19.

Art. 13. All questions relating to the debates which are not provided for in these regulations, will be decided in accordance with general parliamentary practice.

Art. 14. The voting will be by name or by putting the question.

PAPERS, EXTRACTS THEREOF AND DISCUSSIONS IN THE SESSIONS OF THE SECTIONS.

Art. 15. All papers will be presented in writing.

Art. 16. Each author will forward to the Secretary of the Organizing Committee in the City of Mexico and before the first day of August of the present year, an extract not exceeding 300 words, of the paper to be presented by him. These extracts will be printed in English, French and Spanish and will be distributed to the members of the Congress, before the session in which they are to be read.

Art. 17. No paper will be announced which is not accompanied by this extract; but the authors who comply with these conditions, will have a right to have their work published intact in the transactions of the Congress.

Art. 18. The reading of the papers in the sessions must not last more than 20 minutes; when the papers are so long that they cannot be read within that time, the authors will give extracts from them, either in writing or by speech; but they will be published intact in the transactions of the Congress and in the language in which they have been written.

Art. 19. The extracts referred to in the preceding article will be delivered at the same time as the papers to the Secretary of the Section to which they pertain.

Art. 20. The members of the Congress who may take part in the discussions in any section, will present their speeches in writing at the termination of the sessions, to the respective Secretaries of such sections and they will also be published in the transactions.

Art. 21. The papers which have been announced for reading in the order of the day in each section, will serve as subjects for discussion. In such discussions, no speaker will be allowed to speak more than once and for five minutes; but the author of the paper under discussions, will be allowed to reply, if he considers it necessary, in one sole speech, which will not go beyond ten minutes.

AUXILIARY COMMITTEES IN THE MEXICAN REPUBLIC.

Art. 22. These Committees will be appointed by the Committee of Organization and will be composed of one member for each Local Medical Society, or in their absence, of one physician for every centre of population. They will co-operate with the Committee of Organization in promoting the success of the Congress. Said Committees will be appointed during the first months of the present year.

EXECUTIVE COMMITTEE.

Art. 23. In order to form this Committee, the Organizing Committee will appoint seven members, including the President, Secretary, Treas-

urer, and Mexican representative in the International Executive Committee, and such members will attend to everything relating to the business of the Congress, in accordance with the regulations that they may adopt for that purpose.

Mexico, January, 1896.

Dr. Manuel Carmona y Valle,
Dr. Rafael Lavista.
Dr. Eduardo Licéaga.

The Twenty-second Annual Meeting of the Mississippi Valley Medical Association will be held at St. Paul, Minnesota, October 20th, 21st, 22nd and 23rd, 1896. The meeting promises to be the largest in the history of the association. The members are invited to send the titles of their papers to Dr. H. W. Loeb, Secretary, 3559 Olive street, St. Louis, Mo., or to the President, Dr. H. O. Walker, Detroit, Michigan. At a meeting of the Executive Committee of the association, which was held at Atlanta, on May the 6th, the following gentlemen were appointed to deliver addresses: Dr. H. N. Moyer of Chicago, the address on Medicine. Dr. Horace H. Grant of Louisville, the address on Surgery. The reduced rates offered by the railroads, the season, the occasion, all promise great things for this meeting. The officers of the association are: H. O. Walker, M. D., President, Detroit, Michigan; Merrill B. Ricketts, M. D., 1st Vice-Pres., Cincinnati, Ohio; William F. Barclay, M. D., 2d Vice-Pres., Pittsburgh, Penn.; H. W. Loeb, M. D., Secretary, 3559 Olive street, St. Louis, Mo.; Harold N. Moyer, M. D., Treasurer, Chicago, Ill.; C. A. Wheaton, M. D. Chairman Committee of Arrangements, St. Paul, Minn. Executive Committee; Wm. N. Wishard, M. D., Indianapolis; X. C. Scott, M. D., Cleveland; Geo. J. Cook, M. D., Indianapolis; J. M. Mathews, M. D., Louisville; I. N. Love, M. D., St. Louis; A. M. Owen, M. D., Evansville; Wm. T. Belfield, M. D., Chicago; C. S. Cole, M. D., New York; C. A. L. Reed, M. D., Cincinnati; R. Stansbury Sutton, M. D., Pittsburgh.

The Eighth Annual Meeting of the Tri-State Medical Society of Alabama, Georgia, and Tennessee will be held in Nashville, Tuesday, Wednesday and Thursday, October 13th, 14th and 15th, 1896. Dr. Frank Trester Smith is the Secretary (Chattanooga, Tenn.), and the President is Dr. J. B. Murfree (Murfreesboro, Tenn.).

A number of the manufacturers are constantly sending us decisions of the courts in various states in regard to infringements of some of their patents in proprietary drugs. It is always a difficult matter to know just how to do justice to these manufacturers, many of whom

are our advertisers, who have a really valuable article, and at the same time not to do injustice to other advertisers who are equally meritorious, but happen not to be so unfortunate (or fortunate, as the case may be) as to have their goods imitated. If we were to take notice of all of the infringements, we would devote a portion of the Journal to this work. We are compelled, therefore, to act as seems best in this matter, by warning the patrons of the various proprietary articles to be sure that they receive the preparation for which they write or ask. As a general principle, it may be fairly well assumed that every good article has its imitations and imitators, and it will be sufficient for practical purposes to remind the reader of this fact and trust to his being able to take care of himself.

TREATMENT OF WOUNDS BY FORMALIN.—Schleich announced at the Balneologic Society, that he has discovered a new way of causing wounds to heal that renders the greatest triumph of modern surgery, antiseptis, entirely superfluous. With it there is no need for any carbolic or sublimate solution or iodoform gauze. The process consists in sprinkling pulverized gelatinized formalin in the wound, which produces some chemie change in the organism. The living cells take up the formalin, and it acts upon them in some way that has an accelerating effect upon the healing processes of the wound. Pus formation ceases more rapidly than by any other method, while fever and inflammation subside immediately. He exhibited some patients operated upon a day or so previously, for various serious troubles, whose wounds had healed to a wonderful extent.—*Therapeutische Wochenschrift*, March 15.

ETHER VERSUS CHLOROFORM.—Eisendraht has been studying the effect on 130 patients of the administration of these two anesthetics, testing the urine before and after, etc. He finds that pre-existing albuminuria is more frequently increased by the administration of ether than of chloroform. In healthy persons albuminuria is found in 25 per cent. of the cases after ether and in 32 per cent. of the cases after chloroform. Cylindruria follows the use of either in the same number of cases, 32 in all out of 130.—*Deutsch. Zeitsch. f. Chir. in Union Med.* March 7.

At the annual meeting of the American Orthopedic Association, held at Buffalo, May 19th, 20th and 21st, the following officers were elected: Dr. Samuel Ketch of New York, President; Dr. H. R. Sherman of San Francisco, First Vice-President; Dr. W. R. Townsend of New York, Second Vice-President; Dr. E. G. Brackett of Boston, Treasurer; and Dr. John Ridlon of Chicago, Secretary.

SUPERSTITIONS ABOUT BABIES.—The Manx people believe that it will dwarf or wizen a baby if any one steps over it or walks around it.

In some parts of England people bind up the infant's right hand that it may have riches when grown.

In Yorkshire, England, a new-born babe is placed in a maiden's arms before being touched by any one else, in order to insure good luck.

In South America, a book, a piece of money, and a bottle of liquor are placed before the infant the day it is one year old, to ascertain its bent in life.

A baby is considered lucky in Scotland if it handles its spoon with its left hand, and it will be perfectly happy and successful if it has a number of falls before its first birthday.

In the north of England, when a child is taken from a house for the first time, it is given an egg, some salt, and a small loaf of bread, and occasionally a piece of money to insure it against coming to want.

In Germany it is considered necessary that a child should "go up" before it goes down in the world, so it is carried upstairs as soon as born. In case there is no upstairs, the nurse mounts a table or chair with the infant.—*Annals Hygiene*, 1896, xi, 257.

It is announced that the University of Paris will hereafter require of foreigners a literary degree as a pre-requisite to graduation in medicine. Some definite arrangement by which reputable graduates and practitioners of foreign countries can continue their work here, and vice versa, is a desideratum which seems as far from accomplishment as it has ever been. Indeed, when we have not a system by which a practitioner who has successfully passed a very rigid state examination can practice in even a neighboring state without a re-examination, it is hardly to be expected that we can have an interchange of civilities between foreign countries.

The American Laryngological, Rhinological and Otological Society elected the following officers, at the meeting held in New York in April: President, Frank Hyatt of Washington, D. C.; Vice-President, Frederick L. Jack, Chairman of the Eastern Section, Boston, Mass.; John S. Maybon, Chairman of the Middle Section, Allegheny, Pa.; James E. Logan, Chairman of the Western Section, Kansas City, Mo.; William Scheppegegrell, Chairman of the Southern Section, New Orleans, La.; Robert C. Miles, Secretary and Treasurer, 46 W. 38th street, New York city.

The Virginia Hospital at Richmond, Va., has received a legacy of \$5,000 from the estate of the late John Pope, making a total of \$7,500 given by Mr. Pope to the hospital.

CHLOROFORM VS. ETHER.—Among 15,052 cases of anesthetization in Scandinavian countries in the course of a year, there were 5 deaths during anesthesia, all due to chloroform. The death-rate was 0.1 per cent. after chloroformization, 0.15 per cent. after etherization, 0.18 per cent. after ethero-chloroformization. It thus appears that, though chloroform was the only anesthetic which caused death during anesthesia, it proved, on the other hand, to be the least dangerous agent in respect to the postanesthetic mortality. According to the Medical Week, the last statistics published by Gurlt of Berlin, comprising a total of 151,000 cases, give an average of 1 death for every 1,924 cases of chloroformization, and every 26,000 cases of etherization.

REGULATIONS REGARDING THE ISOLATION OF CASES OF DIPHTHERIA IN PRIVATE HOUSES BY HEALTH DEPARTMENT.—In private houses the duration of isolation of cases of diphtheria after apparent complete convalescence of such cases shall be determined by the physician in attendance, with the following conditions:

1st. Children convalescent from diphtheria shall not be allowed under any conditions to attend any kind of school; i.e., day school, Sunday school, dancing-school, etc., until cultures show the absence of diphtheria bacilli in the throat.

2d. Circulars of information regarding the persistence of virulent diphtheria bacilli in the throats of convalescent cases of diphtheria and the dangers from infection arising from such cases shall be furnished by the Health Department and presented by the attending physician (if the patient is a child) to the mother, father, or guardian, or, if the patient is an adult, to the patient, and the meaning of the circular and the significance of its contents explained to them.

3d. The attending physician, when continued isolation is not maintained, shall immediately notify in writing the Chief Inspector of Contagious Diseases of the Health Department of his action, and disinfection of the premises may then be performed by the Health Department.

Exceptions to this rule regarding the time of isolation of convalescent cases of diphtheria in private houses shall be: (1) Teachers of all kinds. (2) Persons whose occupations bring them into immediate contact with children. The regulations of the Health Department regarding isolation of cases of diphtheria in boarding-houses, apartment houses, hotels, and tenement houses heretofore observed shall be continued. [Signed] George B. Fowler, M.D., Commissioner of Health. By order of the Board of Health. Charles G. Wilson, President; Emmons Clark, Secretary. (New York City.)

REVIEWS.

Pædiatrics. A semi-monthly journal devoted to the diseases of children; published by Dillon Brown, M. D., New York, and edited by George Carpenter, M. D., London.

The prosperous appearance of the May number of this recent addition to the literature of a rapidly growing specialty indicates that Dr. Brown's notion of the need for such a journal was correct. "There is always room on top" would seem to be the maxim of the enterprising publisher of *Pædiatrics*.

With men like A. Jacobs, Henry Livy Taylor, Egbert Grandin, J. Boar, Fancourt Barnes, Joseph Collins, Nevins Hyde, Henry Ashby, and others of equally good repute on the editorial staff of any journal, the quality of its scientific and literary matter is guaranteed. Rarely do we find such men actively contributing to the development of a journal. Despite the fact that they may be cited as coeditors, it is customary to regard a list of brilliant names as an ornament rather than as active participants in the conduct of the scientific and literary work. That this is not the intent of the large and able corps of editors of *Pædiatrics*, is evidenced by the articles which have already appeared from the pens of several.

A striking and commendable feature of *Pædiatrics* is found in its illustrations, many of which are of decided merit, and serve to elucidate the text in the most graphic and satisfactory manner.

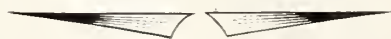
As was the case in the development of *Gaillard's Medical Journal*, the originator and owner of *Pædiatrics* is a physician of high standing, which is a pledge that it will not degenerate into trade journalism, but will maintain a high standard, bent solely upon the gathering and diffusing of the best information and thought in the field to which it is devoted. We offer *Pædiatrics* our best wishes for a prosperous and useful career.

Border-land Studies. Miscellaneous addresses and essays pertaining to medicine and the medical profession, and their relations to general science and thought. By George N. Gould, A. M., M. D., formerly editor of the *Medical News*. Philadelphia, P. Blakeston, Son & Co., 10 & 12 Walnut street, 1896.

A number of the essays included under the caption given and printed in book form, have already appeared as editorials and articles in the *Medical News*, and as independent articles in the *Forum*, the *Monist*, the *Open Court*; and to these the author has added five, which have

hitherto not been published. The whole profession is too well acquainted with the literary and scientific ability of Dr. Gould not to appreciate these essays, even though they are not confined strictly to medical practice. The titles of some of the essays are especially inviting, and indicate the lines of thought upon which the author has been engaged. The book opens with an article on Vivisection, which was an address delivered at the meeting of the American Academy of Medicine, at Atlanta, on the second day of May, 1896. The next article, on Medical Language, is especially characteristic of the writer; and while we do not agree with him in his desire to do away with diphthongs, to drop syllables when he pleases, and to substitute a single letter where the origin of the word necessitates the use of more, we admire the persistence with which the Doctor presents his claims. If, as he says, "etymological spelling is a long exploded absurdity," we cannot see that his own propositions do anything but add confusion to a language already sufficiently difficult. He says, however: "I wish again to emphasize the limitation that we do not advise one clean straight jump into phonetic spelling, simply because it is impossible." Charity Organization and Medicine; Hospitalism; the Untrustworthiness of the Lay Press in Medical Matters, Concerning Specialism; Character; Dreams; Sleep and Consciousness; Immortality,—are the titles of some of the various papers, and give a fair idea of the whole. There are twenty-four articles all told, and each is of sufficient interest to justify the medical man, who is desirous of entertainment and instruction, in buying the book.

Quiz Compend. Diseases of Children. By Marcus P. Hatfield, A. M., M. D. The second edition, thoroughly revised, with a colored plate. Philadelphia, P. Blakeston, Son & Co., 10 & 12 Walnut street, Philadelphia. We suppose that one of the best testimonials as to the value of a compend is the fact that it can live into a second edition. The present work is uniform with the Quiz series published by P. Blakeston, Son & Co., and is one of the most interesting volumes in the series.



GAILLARD'S MEDICAL JOURNAL.

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THE HOUR FOR CAPITAL OPERATIONS.

Of the many questions that present themselves for solution in regard to operative cases, a by no means unimportant one is that of the hour for operating. A good deal may be said for almost any time that may be selected, and for this reason: It may be generally assumed that the hour selected is the one that suits the surgeon best. For many reasons we cannot find fault with the operator for taking such a time as seems best to accord with his other engagements. It has long been a recognized right of the patient not to be disappointed, if by any possibility this can be avoided, after the hour has been named and the preparations made for the operation.

In following the course of operative cases and various operators for a number of years in the hospitals of a large city, it has seemed to us that the early morning operation had a great many claims which entitled it to serious consideration by operators. A good night's rest, attained artificially if necessary, an empty stomach, the patient all ready for anæsthesia upon awakening, the fear and dread of what is coming being crowded into the fewest possible moments, the whole day with active attendants constantly moving about and alive to every demand of the patient, the ability to run in and see for one's self how the case is doing during the first 12 to 18 hours, without encroaching upon the practitioner's allotted time for sleep, are a few of the points which seem to recommend an early hour. On the other hand, it cannot be denied that it may be a source of greater task upon the surgeon's powers,

especially if he be concerned and anxious, as always conscientious men must be in regard to capital operations, and if this anxiety interferes with the operator's sleep. Even with this disadvantage we still believe the operator capable of doing better work before he has become tired and annoyed by the various demands upon him during the early hours of the day. It would be impossible to compare the results, because we have no data with which to make a comparison; but we believe that the men who have operated extensively in the early morning hours have never returned to afternoon operations as a matter of choice.

A THERAPEUTIC ICONOCLAST.

The Section of Pædiatrics of the American Medical Association at its recent meeting in Atlanta, discussed several important and interesting papers. Among these the paper of Dr. Larrabee of Louisville, is entitled to special attention, because the doctor strikes some well-aimed blows upon the therapeutic superstitions which too often cling to the old practitioner as a remnant of his early training, and which are not less frequently brought home by the more recent graduate from his college course.

In an article on "Pædiatric Therapeutics, as proven by Experience" Dr. Larrabee well advises that single and simple remedies should be prescribed and with a correct knowledge of their elimination from the body and of the organs exercised in such elimination. The author advocates small and frequently repeated doses in infantile therapeutics. The "shot gun prescription" is but too popular in all branches of medicine. How any reasonable man can formulate a correct rationale of the action of the compounds which were favorite prescriptions of our forefathers, it is difficult to comprehend a lesson may be learned from the only really curative medical agent we possess—Quinine. Formerly this powerful remedy was combined in many formulæ to enhance its efficacy. In recent years it is administered alone, and with equal if not more effective results. So it will be with other remedies, as soon as we reach a positive knowledge of their action. But this cannot be accomplished so long as we combine them with other agents or accept these proprietary compounds against which Dr. Larrabee so justly inveighs.

We can never go back to astringents for infantile diarrhœa, says Dr. Larrabee. The positiveness of this dictum does him credit and may bear good fruit to many of his readers. In typhoid fever he advocates Hydrotherapy. Children are so much more easily bathed that the valuable measure cannot be overestimated in all their pyrexia. It is too often overlooked in the exanthemata and other states. The most iconoclastic idea of the paper broached by the author is the abolition of nauseating medicines like antimony and syrup of ipecac, and then sub-

stitues by Turpeth mineral, when an emetic is indicated. The woes of the poor baby while writhing under a dose of hive syrup, a syrup of ipecac, expressed by its pallid countenance upon which cold perspiration stands in beads, should plead for the abolition of these agents. Turpeth mineral which is easily taken, its dose being small, its action rapid and decisive and almost without nausea would seem far better adapted to the purposes of an emetic. The author makes the startling confession that water is the only expectant which he ever gives in bronchitis and pneumonia. We venture to assert that he who follows this apparently bold therapeutic innovation will have reason to be content. It is the habit of the writer also to administer large potations of pure cold water regularly every two hours in all cases of pneumonia of children and adults with results that warrant him in confirming Dr. Larrabee's statement. Dr. Love said in the discussion of this paper that if he could choose but two remedies, he would name water and calomel. These statements from experienced pædiatrists deserves attention and their practice may be emulated to the great comfort and benefit of suffering infants.

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MISCELLANEOUS.

CANCER OF THE PREGNANT UTERUS.—At the eighth annual meeting of the Southern Surgical and Gynecological Association, Dr. George H. Noble, of Atlanta, Ga., detailed some interesting studies in uterine cancer, giving the histories of one hundred and sixty-six cases which he had collected since 1886.

According to the Journal of the American Medical Association, which gives an abstract of the paper, Dr. Noble confined himself mainly to the statistics of the treatment and results, referring to Bar, Cohnstein and others for information concerning age, period of recurrence, period of abortion, etc. His conclusions are:

1. That vaginal hysterectomy should be safe in the early months of pregnancy and the puerperal state, when there is a reasonable hope for the mother.
2. That abdominal hysterectomy should be done when the uterus is too large to be rapidly and safely removed through the vagina.
3. That at or near the end of pregnancy, Cæsarean section should be resorted to, when the child's interest is to be considered.
4. That Cæsarean section with Freund's operation is permissible when the disease is confined to the uterus and the child is viable.
5. That in doubtful cases, cutting of the cervix and rapid delivery may be judicious when the incision can be made in non-ulcerated or non-infiltrated tissue.

6. That as there are four chances to one against the life of the fetus, and as an equal number of mothers may be ultimately cured in the early stages of the disease, the safety of the fetus should not be allowed to hazard the life of the mother; and that, on the other hand, the futile efforts directed to the interests of the mother when her case is hopeless, should not jeopardize the safety of the fetus in the latter months of pregnancy.

THE ROLE OF BACTERIA IN BUTTER-MAKING.—Professor H. W. Conn and Mr. Wm. M. Esten, following up the investigations of Storch, Weigmann, Adametz and Wilckens. (*Lancet*), have carried on a series of experiments on the ripening of cream for butter-making by artificial cultures of bacteria. Out of a large number of organisms separated no fewer than fourteen were used, whilst, in addition, the bacillus acidi lactici, the micrococcus freudenreichi, the bacillus katz and the bacillus schafferi produce a butter-ripening fermentation, but not so good as that obtained from the use of some of the organisms obtained from the creameries. Professor Conn maintains that if the organisms be obtained from sour cream in a dairy that has a reputation for making good butter they in turn will give good results, the converse holding good that organisms from a bad dairy will produce bad butter. The experiments with mixtures of the different organisms are not yet completed, but it is probable that by combining the action of several micro-organisms an even finer flavor may be obtained in butter made from cream ripened by these artificial cultures. Preliminary heating of the cream to 70° C. prepares the way for the growth of the inoculated bacteria, killing off most of those bacteria that are accidentally present and which often disturb the ripening process. The preliminary heating to 70° C. is of further importance from the fact that so many of the disease germs succumb when exposed to this temperature. One great advantage of this method is that the process may be made to extend over a somewhat longer period than is usually found necessary in dairy operations. In fact, it can be controlled much more accurately than the natural ripening process. The bacteria may be kept alive and active for some time, so that, a good stock having been obtained, a certain flavored butter can always be at command.—*Western Druggist*.



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No. 2.

ORIGINAL ARTICLES.

REMARKS ON TONSILLITIS AS A FACTOR IN RHEUMATIC FEVER.

BY SIR WILLOUGHBY WADE, F.R.C.P.,

Consulting Physician to the General Hospital, Birmingham.

It has long been thought that the rheumatic condition must be due to a special poison in the system, probably circulating in the blood, but how or where produced was doubtful. Clinical observers have for some time noticed that rheumatic fever is often preceded by tonsillitis. It was at first supposed that the tonsillar affection and that of the joints were each equally manifestations of the action of the postulated rheumatic poison.

It was, I believe, Dr. W. Hill who first distinctly suggested that the poison of rheumatic fever might be fabricated in the mouth and throat, and gaining thence entrance into the tonsils and into the system, produced first the tonsillitis and then the rheumatic fever. Later investigations would seem to show that this view, if at all tenable, will have to be amended to the extent that the microbes primarily multiply in the lacunæ of the tonsil, and that they or their toxins enter the system through the abundant lymphatics in the neighborhood of the lacunæ.

To put the amended theory concisely, tonsillitis is a primary infective disease of the lacunæ, rheumatic fever a secondary disease arising from the absorption of microbes or their products into the system.

The microbic origin of rheumatic fever did not obtain much acceptance for a long time; indeed it cannot be said to be even now very generally held. But it is making way, as we may see by referring to Dr. T. J. MacLagan's article on Rheumatism in the "Twentieth Century Practice of Medicine," and to the reported discussion on rheumatic fever at the last annual meeting of the British Medical Association.¹

¹ *British Medical Journal*, January 11th, 1896.

There is one prominent circumstance which has militated against it. The tonsillitis usually precedes the rheumatic fever; sometimes, no doubt, so immediately, that even a patient will tell us that his illness "began in the throat." But in other—perhaps more numerous—cases, the throat has been well for some, often for many, weeks. Moreover, it occasionally happens that the rheumatism precedes the tonsillitis.

I shall endeavor to explain these anomalies, for my present object is to further the acceptance, with certain modifications, of the previously-stated amended theory. Even if we come to the conclusion that certain cases of rheumatic fever arise from microbic infection of the throat, it would not quite necessarily follow that the disease had always a microbic origin. And it would not at all necessarily follow that, if it be always a microbic disease, the infection should invariably gain entrance by the throat. Indeed, we have already evidence that this is not so. The disease known as gonorrhœal rheumatism occurs most often in a subacute form, but occasionally in as acute a form as ordinary rheumatic fever, from which it cannot be distinguished except by its clinical history and its rebelliousness to ordinary anti-rheumatic treatment.²

Most persons who have had large experience of typhoid fever have met with cases in which at an early stage there have been painful swelling and redness of several joints, large and small. This has been seen also in relapsing fever by Murchison.³ Both these diseases have been proved to originate from the presence of a demonstrable microbe. Non-critical sweating, a notable feature of rheumatic fever, occurs also in typhoid. I have often met with it. I quote Murchison's evidence on this point: "Some years ago I noted considerable perspiration in 19 out of 84 cases, and since then I have met with several instances in which there have been frequent and considerable perspirations with only temporary abatement of fever" (p. 518).

Again, except by its history, there are no means of differentiating post-scarlatinal from ordinary rheumatic fever. The microbic origin of scarlet fever will hardly be contested, though its special microbe has not been identified. We thus find three diseases in which the most notable characteristics of rheumatism are liable to occur. And of these diseases two are certainly and one almost certainly due to microbic invasion. This certainly enhances the probability that rheumatic fever may have a similar origin.

Let us now consider the nature of tonsillitis. This was fully discussed in the Laryngological Section at the British Medical Association's last annual meeting. This important body came to a unanimous

² Lydston of Chicago, *Twentieth Century Practise of Medicine*, vol. i.

³ Murchison, *On Continued Fevers*.

conclusion that it was an infective disease upon grounds which may be summarized as follows:

1. The clinical phenomena correspond in every particular with those of an infective disease.

2. Cases have been noted in which the disease had undoubtedly been transmitted from one person to another.

3. Various species of coccus and bacillus are to be found within the lacunæ, within the closed follicles, and even within the epithelial cells of tonsils removed during the acute stage. Leucocytes in large numbers are found associated with the microbes.⁴

There can, then, be no doubt that there is an abundant crop of microbes in the tissues of an inflamed tonsil. Some are of kinds which usually do, and others of kinds which usually do not produce noxious effects upon their hosts. But it must be remembered that the products of microbic growth vary much under differing conditions of that growth.⁵ It is to me inconceivable that bye-products should ever be absent. The abundant lymphatic tissue in the tonsil renders the absorption of such products easy. The completeness with which this tissue is able further to decompose and recombine the absorbed bye-products, or the incompleteness of these processes probably determines the extent to which the body suffers when these bye-products, if noxious, are absorbed. We can then understand that if the proper protective efforts of the lymph system have been exhausted in combating such poisoning, it might be unprepared to deal efficiently with a subsequent invasion of even less virulent microbes.

All clinicians concur in recognizing a catarrhal element as an early factor in the production of tonsillitis. We can well comprehend how an arrest of mucous secretion, or a change in its composition, or a denudation of the membrane might favor both the introduction of microbes and their growth. Indeed, thus only can we explain the well-ascertained fact that the throat is habitually infested with microbes, some of them known to be usually poisonous, and yet infection occurs occasionally only. The case of long persistency of diphtheria bacilli with only rare recurrence of infective manifestations is highly interesting in this connection. Which single microbe or what combination of microbes are the essential element in tonsillitis, has not yet been ascertained. Still less can we say what is the microbic element in rheumatism, assuming that this is a microbic disease.

The case, as regards tonsils, stands thus: Though not proved in

⁴ See report of discussion, *British Medical Journal*, October 26th, 1895.

⁵ There are strong reasons for supposing that appendicitis is due to migration of bacillus coli. In the colon it is innocent but to the peritoneum poisonous.

the stringent manner properly required by Koch, there is the highest degree of probability that tonsillitis is an infective disease. The case as regards rheumatism stands thus: Inasmuch as it so frequently follows an infective disease, and that all its features can be explained by the assumption of a microbic infection, there is a high degree of probability that it also is an infective or microbic disease. If we take into account other features of rheumatic fever besides those already alluded to, this probability will be heightened. Among the prodromata of the full attack we may observe (1) anæmia, (2) undue fatigue, (3) chill, (4) wandering pains.

1. The anæmia so constantly observed after the subsidence of an attack has generally been regarded as a consequence of the attack. No doubt this is partly so, but I long ago satisfied myself by minute inquiry into the previous history that in a majority of cases there had been a precedent anæmia often disguised during the fever by febrile flush.

I had at one time ample opportunity of observation in a hospital devastated by pyæmia, and became quite convinced that anæmic persons were exceptionally liable to pyæmia after primary operations. The anæmia might be due to hæmorrhage, to lead poisoning, to the chlorotic condition, or to other causes. This extra liability was not at the time explicable. Now that we know what an important part the blood plays in protecting the system against microbic poisons, we see its probable meaning. The disproportionate results between the length or severity of a tonsillitis and its effects on the system have been noted and counted as an argument in favor of the infective nature of that disease; perhaps previous anæmia may have something to do with these differences.

Erythema nodosum is most common in anæmic young women. It is recognized as having affinities with rheumatism. It is "often preceded and attended by febrile symptoms, and is not infrequently associated either with rheumatic pains or distinct rheumatism" (Bristowe). I have found it distinctly amenable to salicylate of soda, the anæmia being subsequently treated by iron; preferably, as in most cases of post-rheumatic anæmia, by the iodide of iron. I have seen a case lately which had been preceded by a "very sore throat" a few weeks previously, in a young woman who some years ago had rheumatic fever.

2. Overfatigue. Of this I may say that it is reputed to favor infection. Thus, persons living in a malarious district are especially warned not to "expose themselves to the malarious influences when they are ill or fatigued" (Bristowe). We must content ourselves with saying that undue fatigue seems in some way to lessen the body resistance either to the invasion or the development of microbes, or to

their poisonous influences. The exercise which has produced the fatigue may also determine to particular joints a poison already in the system, as in gout.

3. Chill. I have already stated that throat specialists recognize catarrh as a clinical item in tonsillitis. Chill, as a factor in the production of catarrh, is indisputable. That rheumatic fever also includes chill as an item in its history is, therefore, quite consistent with a microbic origin.

Though it may not yet be established that all cases of lobar pneumonia are due to a special infection, yet the trend of opinion is certainly in that direction. That a chill is nevertheless oftentimes immediately connected with the commencement of pneumonia is, to my mind, quite incontrovertible. An adequate explanation would appear to be that under such circumstances the diplococcus or the bacillus pneumoniæ find suitable conditions for growth. "An exceedingly interesting fact is that the sputum of healthy persons frequently contains the capsule coccus." Diplococcus (Coat's Pathology).

Persons who have been well saturated with malarial poison are liable for long after to have, from a chill, a return of their former symptoms, whether these have been of the remittent or of the intermittent type. This fact is not altogether irrelevant, although bacteria belong to the vegetable, while the protozoon of malaria belongs to the animal kingdom. They are all organisms of the lowest type, and it shows that certain states of the system are equally favorable to each. The protozoon multiplies by fission, as do bacteria.

It may be convenient here, though a little out of logical order, to refer to some other facts which have an important bearing on the probability of rheumatic fever being a microbic disease.

The habit of rheumatic fever to attack one joint after another, sometimes leaving the first joint to return to the various joints after having subsided—the tendency, in short, to metastasis and relapse—seems to suggest, at all events, that it may be explicable by the infusion of fresh doses of poison. That one person should pass through three or four attacks of fever without any heart affection, whilst another has the heart attacked on the first, and perhaps on several subsequent occasions, is remarkable. Cases with high fever and notable joint affection escape, others of a milder type suffer. Chorea cases, in which rheumatic fever is rather rare, are yet conspicuous for the frequency of endocarditis.

These considerations suggest a poison which is capable of modifications, such as would arise from an admixture of various bacilli. Ulcerative endocarditis, which, though occurring in rheumatic fever, is by no means confined to that condition, is, there can be little doubt, due to

the presence of the bacterium which is found associated with it. This shows that, if there be a rheumatic microbe, this is capable of coexistence with other forms. Diphtheria and typhoid bacilli are each liable to similar combinations. It has long been clinically noted that a considerable fever may precede by some days the joint affection; the latter, indeed, may be no more than just enough to establish the diagnosis. The fever may similarly, without any joint affection, precede an endocarditis. I have seen not a few cases where an unidentifiable fever attended by much sweating has immediately yielded to salicylate of soda, and has, therefore, appeared to me to be rheumatic.

These things all suggest mixed poison, capable of acting either separately or in various combinations, and, in the latter, case, in varying proportions. The sudden supervention of hyperpyrexia suggests the infection of the system by either a fresh thermogenetic poison or a fresh dose of that poison which causes the original fever in a greatly enhanced quantity, out of proportion to the other morbid poisons. The fact that the action of the heat center may be affected by coarse brain lesions or by excessive external heat does not prove that it is insensitive to subtle bacterial poisons. In fact, we know that it is sensitive to them.

That there is an intimate relation between chorea and rheumatism is universally admitted. Various post-mortem changes have been found. But Coats is only expressing the general opinion about their relation to the disease when he says: "These lesions, however, are by no means constant, and are to be regarded as consequences of irritation of the brain, or as coincident phenomena" (p. 649). This applies also to hydrophobia.

Now let us look at chorea from a microbic point of view. In tetanus and hydrophobia we have two diseases which affect motor nerve tracts. The bacillus of tetanus has been identified, isolated, and cultivated. The toxin produced by these cultures freed from bacilli has been injected into animals and has produced in them the symptoms of tetanus. The toxin of hydrophobia has been isolated, though its bacillus has not been identified; the injection of this toxin affects the motor system. We have thus two diseases produced by toxins. In the one certainly, in the other almost certainly, these toxins are produced by bacilli. This is cogent evidence of the reasonableness of the view which attributes chorea to an analogous cause.

In all three the motorial system is not exclusively attacked. In all three we know that the movements are much aggravated by emotional excitement. In all three there are evidences of hyperæmia and exudation from the vessels of the nervous system, as consequences of its irritation. Two clinical facts seem opposed to this view. The one is the

causation of some cases by fright, which may be either slight or severe. But we can understand that the nervous system may be at first only rendered unstable in a minor degree which, before the fright, had not given rise to notable motor affection. From a large experience of chorea, which is very common among the hospital population of Birmingham, I know that in many cases, apparently due to fright, close inquiry will elicit evidence that this is so.

Paresis frequently precedes choreic movements. A child drops a teapot in consequence of this muscular feebleness; the mother violently abuses the child, already frightened at its accident; the choreic movements then developed are attributed to the fright, whereas the choreic paresis already existed.

The second objection is the origin of chorea from imitation. I have seen several supposed examples of this, but not on the large scale recorded by some writers. I will not dispute this mode of origin, but we can see that the close association of a hospital ward is well calculated to promote the infection of one throat from another, if that is the source of the rheumatic and choreic poison. Reason will be given to think that such infection does not necessarily imply any violent inflammation of the throat, such as would be sure to attract notice. Minor affections may easily be overlooked when we are not on the lookout for them, for it is easy not to see that for which we do not look, and not to look for that which we do not expect to find.

But it must be admitted that chorea may be due to a constitutional instability of the nervous centers in some, and especially in female children. This may be conceivably the cause of chorea from fright, and also from imitation. An added instability from poison would enhance such a condition of instability, but might not be necessary.

4. Wandering pains. The clinical history of febrile diseases, which we believe or know to be of microbic origin, shows that various pains oftentimes accompany their early stages. The backache of smallpox is an example. The prodromal pains of rheumatic fever are often associated with pyrexia, usually moderate in amount. This state is really rheumatic fever. For it has been shown by P. M. Latham and others that this disease may exist without either arthritic or cardiac affections.

A little girl suffering from chronic moderate chorea was seized suddenly with fever without apparent external or local cause. I judged that it was probably rheumatic, and so treated it. As it was subsiding both wrists became somewhat swollen and painful.

Cases of moderate fever with wandering pains are often allowed to lapse into ordinary rheumatic fever through want of immediate and vigorous treatment. It can scarcely then be disputed that these early

wandering pains point to the inclusion of rheumatic fever amongst microbic diseases and not to its exclusion therefrom. Tonsillitis is often accompanied by such pains even in cases in which no distinctive rheumatic symptoms are subsequently developed.

I have already referred to fatigue as a cause of rheumatic fever. It is convenient to add a word on that topic. It may be that it is the stress thrown upon the joints by the exercise which has produced the fatigue which causes the disease to be attracted to and concentrated in the joints. I have pointed out elsewhere⁶ that something of the same sort occurs in gout.

We have now surveyed the chief phenomena of rheumatic fever, as well as some other diseases having superficially something more or less in common with it. These latter are generally reputed, though not all with quite the same certitude, to be due to poison generated by microbic growths.

The facts of rheumatic fever have not been harmonized or explained by any as yet recognized theory. They can be harmonized and explained by the hypothesis that they are due to poisons generated by microbic growths. In a large number of cases we find microbes which commonly produce toxins multiplying in a part so freely supplied with lymphatic tissue as to render the entrance of toxins into the system exceedingly easy, and, therefore, probable. We find also microbes in the closed follicles and the epithelial cells. Do not all these considerations afford a strong presumption that rheumatic fever itself has a microbic origin?

Let us now look at the question from a throat point of view. The natural history of tonsillitis shows that it is divisible into several classes. In considering these we have nothing to do with any hypothesis or theory as to the origin or nature of rheumatism. These classes are:

1. Tonsillitis, with or without abscess, which is neither preceded, attended nor followed by rheumatism.

Miss P., aged 18, had for several years been subject to attacks of tonsillitis, several with abscess. She got a chill while skating, the throat became inflamed, and in about a week she had several joints swollen and painful, and some pyrexia. She had never before had any rheumatic symptoms.

⁶ *On Gout as a Peripheral Neurosis* (London, 1892). In this memoir I have shown that many of the symptoms which have been supposed to be due to changes in the joints are really due to changes in the nerves supplying or surrounding the joints. Any one can ascertain for himself whether or not this is true. None, so far as I know, who have taken the trouble to acquaint themselves with my views and to examine cases by the light of them, dispute their accuracy. These facts suggest further that the actual arthritis may be due to these nerve changes rather than to a primary and independent arthritis.

3. Cases of repeated tonsillitis without rheumatism, then an attack remotely followed by rheumatism. A young lady had three attacks in the course of about seven months, the last one followed after an interval of several weeks by rheumatic fever.

4. Cases of first attack immediately followed by rheumatism. A lady and her child's nurse contracted tonsillitis in a foreign hotel. The nurse had rheumatic pains, rapidly developing into rheumatic fever, which she had never had before. Miss P.'s sister (see No. 2) caught a chill at the same time. Her throat became very sore, and in three or four days she was very ill with tonsillitis and rheumatic fever, neither of which she had ever had before.

5. Cases of first attack, remotely followed by rheumatism. A lady got severe tonsillitis in Rome. After that several febrile attacks ranging over about a year, then rheumatic fever. She had before had scarlatinal rheumatic fever. She had two more attacks, one without preceding sore throat, the third immediately following a tonsillitis of moderate severity.

These are cases which would come under another class or classes with which I will deal presently.

Let us now consider how far the cases already specified can, having regard to other known microbic disorders, be harmonized with a microbic theory of rheumatism. A microbic tonsillitis with or directly followed by rheumatism we could completely explain without assuming a special rheumatic microbe. But they oppose no obstacle to such an assumption. On the other hand, the existence of cases unattended by rheumatism seems almost to require the assumption of a special rheumatic microbe, sometimes associated with the bacteria of tonsillitis, sometimes not. This would also explain the undoubted fact that repeated attacks of tonsillitis without rheumatism may precede an attack with rheumatism.

How rheumatism, remotely following a cured tonsillitis, may be produced we can also understand. We may suppose, for example, that an "unformed ferment" may in some cases pass immediately into the system, or may, on the contrary, be indefinitely detained in some part—possibly in closed follicles of the throat. I shall not pursue this further, because, in my opinion, the supposed facts which it is required to explain are non-existent.

The supposed fact is that not only has the tonsillitis gone, but that the throat is sound. The real fact is that the throat is not sound. A condition of chronic catarrh remains behind, sometimes attended with persistent or recurrent slight soreness, or what the patient calls "stiffness" of the throat in swallowing; more often with recurrent soreness, of which the patient makes light and which he will not mention spon-

taneously, generally requiring to be closely interrogated; collection of phlegm in the pharynx during the night, with "hawking" sometimes producing retching in the morning; the marks of chronic catarrh or relaxation are visible on inspection. This condition may continue not only for weeks and months, but even for years. I saw a gentleman lately who said: "I have had what I call a 'scrapy' throat for years. About twice a year I get a more or less severe sore throat. I had one about six weeks ago." Just about that time, but whether before or after the throat he could not remember, he got a pain down the outside of the right arm—musculo-spiral neuritis, still existing when I saw him—then pain and tenderness down the right side of the neck from the mastoid process; a tender narrow cord with very small nodules here and there in its course; neurasthenia; the throat bore marks of chronic catarrh and lymphoid granulations; no rheumatism. In another case recovering from rheumatic fever similar symptoms, but on both sides of the neck; pain and tenderness extended to the point of the shoulder. From this I inferred that there was a neuritis of some cervical nerves as well as irritation of absorbents. The last case but one is mentioned to give an opportunity of pointing out that such a throat condition is not so insignificant as is commonly supposed. It is a factor in some, perhaps, in many, cases of neurasthenia, anæmia, and general ill-health. This was so in the case of Miss P., above quoted. It was for such symptoms she first consulted me, five years after the rheumatic attack. During that time she had never been well, and had had slight transient soreness of the throat frequently, often twice a week. In such cases the irritation of the absorbents is certain proof of the entrance of poisonous matter into them. The co-existent neuritis is another scarcely less cogent proof; for considering the known causes of neuritis—lead, arsenic, alcohol, diphtheria, exanthemata, gout.

It is most important to observe the parallel between these two cases. In both throat disorders of a catarrhal character, followed by irritation of absorbents and neuritis; in the one rheumatic fever, in the other no rheumatism. It can scarcely be denied that this brings rheumatism into very close quarters with an infective disease originating in the throat, at all events with a throat disorder capable of manufacturing a poison infecting the system. And it must be presumed, in the present state of science, that such a disorder is itself produced by infection. Herein also we find, I think, a hint of the connection between rheumatic fever following tonsillitis immediately, and that which follows it only remotely, perhaps also a clue to the real meaning of a "rheumatic diathesis." Let us again assume, for the sake of argument, that this fever depends upon the growth of a specific bacillus or group of bacilli. Since not all cases of tonsillitis are followed by rheumatic

fever, one of two things is pretty certain: either that a special bacillus, or group, must to produce rheumatic fever be added to those which cause tonsillitis; or that it requires a special constitution of the system to allow of the development of acute tonsillitis and the rheumatic fever which follows it, but with a considerable gap between the two, the gap being bridged over by continuous or remittent catarrh. These clinical facts strengthen the suspicion that there is a special bacterium or combination of bacteria capable of affecting the system without producing any of those vehement local symptoms characteristic of acute tonsillitis; it is also legitimate to suspect that such a body or bodies may have a faculty of growth in throats which have never been the seats of an acute tonsillitis.

This special constitution may be an absence of protective faculties in, for example, the blood; or the presence of a special susceptibility of some part of the system, for example, of some section of the nervous system. In either case we are able to attach a definite meaning and reality to the conception of a "rheumatic diathesis."

The fact that ~~so~~ many cases of tonsillitis are never followed by rheumatism; the fact that repeated attacks may never be so followed, and yet that ultimately a similar attack may be so followed—these facts taken together, seem to point strongly to the conclusion that there is a special rheumatic bacillus or bacilli; and, further, that this special bacillus may or may not be associated with those of tonsillitis. That such an association is common, and the immediate result cannot be denied. Theremotecases still more forcibly suggest a special bacillus, the tonsillitisinsomewaypreparing the parts either for its more luxuriant growth or for the more ready entrance into the system either of the bacillus or of its products. If this be so, since the immediately accompanying sore throat is trivial, it is clear that the local action of the bacillus is trivial, though its secondary effects are so formidable. We can further understand that the local action may be entirely overlooked unless specially inquired for, from all which it is reasonable to suggest that rheumatic fever may have its origin in the throat in other cases than those in which it is manifestly (in some way) connected with acute tonsillitis; for till the subject has been further investigated, it is premature to conclude that an acute tonsillitis is an essential prelude to the growth of the special bacillus.

I will now again refer to another class of clinical facts in themselves important directly for practical guidance. They are important also indirectly in their bearing upon the possible production of rheumatic fever by locally insignificant throat disorder. I have seen not a few cases in which the prominent symptoms have been neurasthenia, anæmia, general debility, general ill-health, often with slight recurrent

febrile symptoms, disturbance of stomach, or liver, or kidneys. In some of these, but not in all, there was tenderness in a line running from the mastoid process down the neck; in some, a very tender spot over the upper part of the scapula, suggesting neuritis of upper cervical nerves, as a branch of these runs down and terminates there. One does not see how lymphangitis in the post-sterno-mastoid region should extend to this point. But that there is lymphangitis in some of these cases is certain, because not only tender cords can be felt, but at intervals distinctly enlarged lymphatic glands, also very tender. They are mostly of the size of shot of varying diameter. One I have seen as large as a small horse-bean. The tenderness, whether it be in nerve or lymphatic, varies in a fitful manner. Occasionally there is a fitfully recurrent tenderness, redness, and puffiness over the mastoid process. We find a history of sore throat—probably not very severe—early in the case, oftentimes with irregular recurrences. Pyrexia is not a necessary element, either initially or subsequently. It may be absent even when there is considerable local affection, and where other symptoms of blood poisoning are conspicuous. I have lately seen a well-marked instance of this. These cases have not got well either spontaneously or under ordinary treatment. Examination of the throat reveals some or all of the following conditions: Slight enlargement of one or both tonsils, with a velvety appearance, streaks or patches, or general redness of soft palate, uvula, and pharynx, streaks of mucus descending from the naso-pharynx, adenoid growths. These cases have been most intractable by ordinary treatment, such as iron in cases of anæmia, nerve tonics in cases of neurasthenia, and so on. But they readily respond to such treatment when to it is added disinfection of the throat by means of gargles, sprays, or insufflation. One of the best gargles is $\mathcal{R}$ mellis $\mathcal{Z}$ iv, lot. nigr. $\mathcal{Z}$ vijss. The sprays I have found most useful are: $\mathcal{R}$ Zinc. sulpho-carbol. gr. iv, aq. $\mathcal{Z}$ ij; and $\mathcal{R}$ Acid. sulphuros. $\mathcal{Z}$ j to $\mathcal{Z}$ ij, aq. ad $\mathcal{Z}$ j. As an insufflation, $\mathcal{R}$ Salol, sod. bicarb. a ā gr. iij to gr. v. If the patient uses the spray himself he should direct it through each nostril as well as through the mouth.

The history of blood poisoning from slight throat disorders has yet to be written. In the meantime, I most earnestly recommend practitioners to adopt the hints above given in suitable cases. These they will readily find on inquiring into the throat condition and history of intractable cases of general ill-health, etc.

The bearing of such cases which present no rheumatic symptoms on the possibility of rheumatic fever arising from slight throat disorder will be apparent, and does not require elaboration.

The facts and considerations which I have stated have certainly convinced me, and will, I hope, have a similar effect upon others, that

there is a very high degree of probability that rheumatic fever does directly depend upon microbic poison. To convert this probability into certainty much is required. We want further clinical evidence of the association of the disease with slight throat disorders, whether these have or have not been preceded by flagrant tonsillitis, and whether they are continuous, or remittent, or recurrent. This applies also to chorea and to erythema nodosum, to slight or subacute rheumatism, as well as to pronounced rheumatic fever.

To bacteriologists I would suggest the separate cultivation under varied conditions of the microbes usually found in acute lacunar tonsillitis, and the physiological testing of their products. But more especially a similar investigation of the slighter throat disorders associated with blood poisoning, whether rheumatic or not. It is, of course, possible that, as Dr. MacLagan suggests, the morbid element may be allied to that or those found in malarial poisoning. It should, therefore, be attempted to settle this point by examination of the blood.

In medicine, as in all other walks of life, our actions must on a vast number of occasions be guided by and based upon not certainty, but probability. I therefore take the liberty of urging upon practitioners the necessity of attending to the disinfection of the throat in rheumatism, however slightly it may be disordered, and however slight the rheumatic symptoms may be. (B. M. J.)

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TRANSLATION.

GALACTOPHORITIS.

Translated for Gaillard's Medical Journal.

By H. McS. GAMBLE, Ph.D., M.D., Moorefield, W. Va.

Galactophoritis, or inflammation of the glactiferous canals, is a relatively frequent affection that plays a great role in the pathogenesis of abscesses of the breast. It is very important that it should be understood from a clinical point of view; for, by a well-conducted treatment, one may avoid a great number of those glandular abscesses which have such a great tendency to recur.

The name of galactophoritis is due to M. Budin, who has carefully described this affection. It is also to him that we owe his mode of treatment, which consists in evacuating the pus by aid of digital expression.

Our study being essentially clinical, we do not desire to enter into the details of the pathogenesis of tumors of the breast. Besides, it suffices to know that this organ may be infected by the blood route, by the lymphatic and by the excretory routes. These two latter modes of infection are by far the more frequent.

Chapaignac had already shown that the pus might be seated in the galactiferous canals. This was, according to his view, the canaliculated intero-mammary abscess. M. Duplay, twenty years before, considered abscesses of the breast as having their point of departure in inflammation of the galactiferous canals, which was then propagated to the gland. At present, these facts seem very easily explained. Ascending glandular infections have been observed in all glands having excretory canals. Abscesses of the breast are for this very reason comparable to the infections of the kidney, through the ureter; to the abscesses of the liver of biliary origin, and to the parotiditis due to infection of the canal of Steno.

It is then a well-established fact that the mammary globules may be infected through the galactiferous canals. What are, then, the infectious agents, and whence do they come?

The pus of the different cases of galactophoritis that have been published has been examined a number of times. We ourselves have cultivated the pus of all the cases that we have observed in the service of M. Budin. The micro-organisms thus isolated have always been staphylococci, golden and white. These microbes exist moreover in the normal state in the galactiferous conduits, and if sterilized milk is desired, care must be taken to draw a pretty large quantity of milk in order to get rid of the microbes that are contained in these canals. It is possible that under the influence of a bad general condition these microbes, previously harmless, might acquire a peculiar virulence. It is more probable that the excoriations produced upon the nipple during the act of sucking may serve as an entrance door to these micro-organisms. But the more generally, these germs come from without, brought, perhaps, by the new-born, perhaps by those around about the patient. The mouth of the child contains, in fact, a large number of microbes, among which are found some staphylococci. The suppurations that are met with in the new-born (purulent conjunctivitis, paronychia, coryza) may likewise become the starting point of the infection.

The mother herself may infect her breast by placing upon the nipple her fingers soiled with the lochial discharges.

Finally, the midwife or the physician may become the cause of infection, if their hands are not kept clean.

Symptoms.—The affection appears the more frequently towards the eighth or tenth day after confinement in a woman who nurses. It almost always appears incidentally, which explains why it often passes unnoticed during the earlier period. However, we may succeed in preventing it in its inception by methodically examining the woman during her lochial period.

The more frequently, the first symptom observed is an elevation of the temperature. The thermometer marks 38° , 38.5° , 39° , very rarely

above 39° . The pulse is about 100. At the same time supervene some of the general signs that accompany every elevation of temperature. The patient complains of headache, loss of appetite, malaises, etc. These general symptoms may precede the local signs by a few hours, or even a day. The latter consists in painful phenomena confined to the diseased breast. This pain is moderate.

It is a sensation of heaviness and weight. It is exaggerated by the movements of the arm during the nursing of the child. However, the patients are ordinarily relieved after nursing. In certain cases, the pain is extremely sharp; it is lancinating, and is exaggerated by the least movement, therefore the patient exerts her utmost to immobilize the breast.

If we examine the diseased region we find that the breast is generally increased in size, sometimes that it is asymmetric. The skin preserves its normal color, unless there is a complication of lymphangitis.

Palpation is generally painful. It should be done with the hand placed flat. We then notice that the mammary gland is tense, especially at certain points, where we meet with indurated nodules. These nodules have a variable location. Sometimes we find only an isolated one, more or less remote from the nipple; at other times, they are disseminated in the glands to the number of three or four. The nearer they are to the periphery of the organ, the more painful they are upon pressure.

So far these signs are not very characteristic; but if we endeavor to express the milk, pus is seen to escape by the milk ducts. This is the pathognomonic sign of the affection.

M. Budin has insisted upon the character of this pus. At first, it is pure milk that escapes from the nipple, then a thick yellowish matter is perceived at the point of one or several galactiferous conduits resembling vermicelli. It is thickened pus which is found at the entrance of the canal. If the pressure is continued, true pus is then seen to escape. This fluid is very different from milk. It is yellow or greenish, more or less fluid, and is clearly defined by its coloring upon the milk in the midst of which it swims.

Whilst the milk flows very easily, pus is more adherent and only flows when the drop is heavy enough to be carried away by its own weight. Finally, if care is taken to collect the liquid flowing from the breast upon absorbent cotton, the milk is seen to penetrate the cotton, whilst the pus cannot filter through the wad, and forms a greenish drop that stands out very clearly.

The quantity of pus is variable. The more frequently a coffee-spoonful can be collected; sometimes much more—a tablespoonful, for example. This expression of the pus is ordinarily painful, but it is bearable. Let us say, in closing, that the axillary ganglions are not enlarged.

The progress of galactophoritis depends above all upon the treatment. If care is taken to make expression of the pus two or three times a day, the cure is not long in coming. The breast diminishes in size, the pain disappears, the general symptoms are ameliorated, and everything is restored to order at the end of two or three days. If, on the contrary, the affection is not recognized, and if the pus is allowed to remain in the lobule attacked, the pain increases, the fever continues, the local signs become more pronounced, and at the end of a few days we have all the signs of an abscess of the breast, the pus having filtrated into the peri-acinous cellular tissue.

The prognosis of well-treated galactophoritis is but of little gravity, since, according to Budin, one should obtain a cure in two or three days nine times out of ten. If, on the contrary, the affection is unrecognized, there will be produced as many abscesses as there are lobules attacked.

If the affection has but little gravity for the mother, it is not the case for the new-born if the physician has not taken care to prevent nursing from the diseased side.

In fact, as we shall see later, the pus swallowed by the child may become the source of grave and often mortal infections.

The diagnosis of galactophoritis is generally easy.

The presence of pus in the milk permits us in effect to affirm the inflammation of the lactiferous ducts. When a woman recently confined has a temperature of 38° and above, and nothing in the state of the genital organs can explain the fever, we ought immediately to examine the breast of the patient. The lacteal engorgement is seen in the twenty-four or thirty-six hours following labor; fever is the more generally absent. Superficial lymphangitis is recognized by the diffused redness of the breast; the lymphatic chains can be followed upon the surface of the organ. Besides, the temperature generally mounts suddenly above 39° . Deep lymphangitis is more difficult to recognize, but one can follow with the finger the hard cords formed by the inflamed lymphatic vessels. In both these kinds of lymphangitis, the ganglions in the axilla are painful and hypertrophied.

Abscesses are ordinarily easy to diagnosticate. There is formed a profound thickening at the level of the skin. The pain is sharp and lancinating. The cutaneous surface is red and infiltrated. When the abscess has formed, the pus is felt forming a prominence at some point. If the finger is deeply pressed at this locality, a depression is felt, formed by the purulent track.

Complications.—We have already indicated the complications that might arise on the part of the mother. In the first place, must be mentioned the glandular abscesses, the pathogeny of which is very difficult to explain by ascending infection.

Lymphangitis of the breast may likewise complicate galactophoritis. In this event the fever is more intense, redness of the breast is present, and pressure causes pus to escape by the nipple. This lymphango-galactophoritis may also be cured without the production of an abscess, but the treatment is much more difficult to be borne by the woman, for the expression is much more painful.

The consequences of galactophoritis are particularly grave for the new-born. In fact, the latter may be infected in several ways. The pus contained in the lactiferous ducts is swallowed at the same time as the milk. Infections result which may take place in passing upon the whole digestive tract; the microbes may even pass into the blood and produce suppurations at a distance. Along with these infections from an internal cause, must be mentioned those that are caused directly by contact of the pus with the integuments of the new-born. These latter are less grave and less frequent.

All these maladies which may be produced if the galactophoritis has been unrecognized have been clinically reported. Karlinksi has even been able to reproduce them experimentally.

We shall not dwell upon these affections of the new-born, and we refer the reader to the paper of M. Damourette, who has adopted the views of MM. Budin and Boissard. This author has reported some cases of diphtheroid, stomatitis with staphylococci, and some observations in which are again found all the varieties of gastro-intestinal dyspepsia. The symptoms of these affections present nothing peculiar; only we will say that the digestive disorders are often very insidious, and that the only sign of infection consists in a rapid fall of the standard of weight. The little patients do not assimilate, and it is not rare to see the production of multiple abscesses in consequence of this rapid waste.

These multiple suppurations are quite profound. They evolve without local reaction. The pus is very thick, whitish, resembling caseous matter. It always contains staphylococci. The superficial suppurations are not due to the same cause. It is by direct inoculation that these are produced, the pus being brought into contact with the skin. These little abscesses have the features of warm abscesses; they succeed one another at intervals more or less remote, and fifteen or twenty of them may be observed during the month that follows the infection.

In this order of suppuration by direct inoculation must be included pemphigus and purulent conjunctivitis, which may be due to the micro-organisms contained in the pus of the breast. All these infections are more or less grave, and when the children recover, they still remain for a long time under the influence of the toxins absorbed.

Treatment.—Galactophoritis proceeding from an infection of which

the point of departure is the external orifice of the conduits, we may, to a certain extent, prevent its production by prophylactic means. The woman should be advised to touch her breast as little as possible; then, before and after each set of nursing, she will be careful to wash the nipples with warm boricated water. Finally, a light dressing will have to be maintained upon the breast. If the infant presents any supuration whatever, and, above all, conjunctivitis, the diseased region will have to be isolated by aid of a protective dressing.

When galactophoritis is recognized, recourse should be had to the treatment recommended by M. Budin, which gives excellent results. It consists in evacuation of the pus by aid of digital expression. This expression should be performed in a particular manner.

It is necessary in the first place, to commence by emptying the dilations of the galactiferous canals. In order to accomplish this, the thumb and index are applied to the external portion of the areola; then pressure is made strongly from before backwards, from the superficies towards the deep structures; the two fingers are then approximated whilst continuing to press as far as the extremity of the nipple. The pus is then seen to escape at the same time as the milk. The same maneuver is repeated at different points until no more pus flows. If the infection has invaded a lobule, the latter should be pressed from without inwards, so as to bring the pus into the galactiferous canal. This canal will then be emptied in the manner we have just indicated. The breast should be washed after the operation with a slightly antiseptic fluid; then the mammary gland must be compressed, whilst strongly raising it. This treatment has the double advantage of acting upon the galactophoritis and of preventing the woman nursing on the diseased side. The new-born should in fact, suck the diseased breast under no pretense. The dressing should be removed in the evening, in order to go through with a second seance of expression, and the treatment will be continued until no more pus remains in the gland (two or three days on an average). It will be well to wait still a day or two before restoring the child to the breast.

If lymphangitis exist at the same time, the treatment will be the same, but it becomes much more painful. It will be well, in certain cases, to cause the patient to inhale a few whiffs of chloroform. The lymphangitis will be treated apart by warm atomizations and by moist dressings. If in spite of the expression an abscess is formed, it will be surgically treated by free incision of the pouch.

The new-born will continue to nurse from the sound side. If the quantity of milk is insufficient, we can supplement the alimentation by aid of sterilized milk, until the diseased breast no longer contains pus.

SELECTIONS.

HOW SHALL WE FEED THE BABY ?¹

By JOHN T. WINTER, M.D.

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It should be the pleasure of every mother to nourish her babe from her own breast, and, to insure a proper understanding of what is expected of her, it is the duty of the attending physician to instruct her in some of the details of motherhood with which she is so soon to become familiar. It is also his duty to see that the child is placed in a proper position at the mother's breast within the first half-hour after its birth, or as soon thereafter as the mother has recovered somewhat from the fatigue of labor. I do not claim that the child will get milk from its mother's breast at this early period, but it will get, in a majority of instances, a small quantity of colostrum, which not only affords some nourishment to the infant, but, because of its laxative properties, clears out its intestinal canal and has a beneficial action on the mother, as it not only hurries the secretion of milk, but causes uterine contraction. It also serves another good purpose in affording peace of mind to the attending physician, as he will know by this little attention on his part that the child can nurse, and that there is proper uterine contraction and therefore no danger of hemorrhage.

But this is not always the whole question. Natural lactation is undoubtedly the method which ought to be preferred, if practicable, but to this general rule there are many exceptions. A woman to be a good nurse should enjoy perfect health, should be rather spare than fat, and should be cheerful, good-natured, active, careful, and above all temperate. This will apply as well to a wet-nurse as to the mother herself.

The manner in which the menstrual function is performed may, to a certain extent, be regarded as an indication of the manner in which milk will be secreted. If menstruation be irregular and scanty there is fear that the lacteal secretion will be badly accomplished, and when the menses are habitually too abundant, nursing fitness is also improbable. But when this function has always been performed normally, when the woman is regular in time and quantity, the presumption is in favor of her making a good nurse. It is necessary, therefore, for the physician to inform himself in all these particulars, so that he may be able to antici-

¹ Read before the Washington Obstetrical and Gynecological Society, May 3, 1895.

pate and direct the mother in the feeding of her child, and how to avoid some of the errors they seem so ready to hunt up and adopt. Some of these errors are frequently begun within the first hour of the child's life. It will be found in many instances that the little stranger has scarcely finished his first bath when, if you are not on the lookout to prevent, the nurse will begin her part of the mischievous work by dosing it with a little sugar and water, catnip or chamomile tea, or some other decoction of a similar character, which she many times carries with her to the patient's house; and while you may prevent this dosing as long as you remain in the house, you will find in the majority of instances, even when she denies it, that before your next visit she has gotten in her work.

I can readily understand that the young physician can ill afford to brook the opposition of the old nurse, who perhaps was nursing before he was born, and may have nursed in her infancy the very woman he is now called to attend; but he can much less afford to curry favor by conniving at her pernicious practices. The ingestion of the vile stuff with which the infant is so frequently dosed during the first day or two of its life is the first step toward the formation of that bugbear of old women, the red-gum, an erythematous lichen—lichen strophulus—an affection brought on by the very means adopted to guard against it; and unless the physician has a sufficiently strong hold on the confidence of the family to enable him to correct at once this first piece of ignorance and meddlesomeness, he will find that it is but the beginning of a course of unnatural feeding which will, in many instances, bring death to the child.

In nursing or feeding an infant, regularity in point of time should be observed. During the first week every two or three hours in daytime will not be too often, and at night only if the mother's breast needs to be unloaded. By the end of the second week, as a rule, when the child is strong and healthy, to be nursed or fed once in three hours during the day and up to the mother's bedtime, and then not at all for six or seven hours, when both mother and child should sleep, will be found amply sufficient. The child should never be given the breast or bottle simply to keep it quiet, but should be taught regular habits in this direction. You will meet with opposition from the nurse, who will be supported in her opposition by all the old women in the neighborhood, and you will be informed, perhaps, as I have been many times, that you have never had a baby and that women only have any knowledge on this subject. Many of my patients have, however, adopted this method, and have thanked me over and over again for the comfort they have with their children.

A nursing mother in good health will generally grow fat during the

first few months of lactation, but this plumpness will gradually be lost if nursing is continued too long or if the child is allowed to nurse at night, especially if it is allowed to lie at the breast and nurse when it pleases. Under such circumstances it will not be long before the mother's milk will cease to nourish the child, or if it does so it will be at the expense of the mother's health. I have seen some terrible examples of this kind—young mothers scarcely able to get out of bed in the morning, and who claim to be more tired, if possible, than when they went to bed the evening before. Among the early symptoms of failure from this cause are heavy dragging sensations in the back and loins, and directly between the scapulæ when the child is at the breast, and a peculiar feeling of sinking and emptiness at the pit of the stomach and over the whole abdomen for hours afterward. I have a patient of this kind under my care at the present time.

Under such a condition of affairs the question of artificially stimulating the lacteal secretion would naturally follow; but, as I have already put myself on record on this subject, I will only say that while temporarily stimulating this secretion during the illness of a child, for example, is frequently proper and should be done, the continued use of beer, ale or other preparations of this kind will be found to keep up or increase the quantity only at the expense of quality, and it will soon be found that the mother is not only being seriously injured, but that the child is not being nourished.

While there are many honorable women in the land who do suckle their own children, and many mothers who would be delighted to do so, but cannot or should not, as they are many times the subject of some physical or mental disturbance which unfits them in every particular for this pleasant duty, there are others who will not nurse their children, not for any particular reason, only that they do not care to do so. When, therefore, the mother cannot or will not nurse her child, and where a suitable wet-nurse cannot be secured, some other method will have to be adopted, and the child has a right to the nearest and best substitute for mother's milk with which we can supply it, and that substitute is usually found in the milk, or some of the products of the milk of the cow. The milk of the goat and ass is said to more closely resemble woman's milk than that from any other animal, but these animals are not kept in sufficiently large numbers to supply the milk required in the artificial feeding of children. The milk of the cow is, therefore, the nearest practical substitute for that of the mother.

Human milk has a specific gravity of 1031 and has a persistently alkaline reaction, and shows, when placed under a microscope, a number of minute, equal-sized fat globules; it coagulates into flaky curds, and is quite readily attacked by the digestive ferments of the child's stomach

and intestines; while cow's milk has an average specific gravity of 1029, and, unless perfectly fresh and from pasture-fed cows, has a slightly acid reaction, contains less fat and sugar, but is richer in casein and coagulates into a very firm curd, and is therefore much harder for the child to digest. This difference is readily tested by adding rennet to the two fluids. Under its use the milk of the cow coagulates into large, firm masses, while with human milk a large, loose curd is formed.

The chemical and physical properties of cow's milk can be altered by various methods of preparation, so as to make it approach more closely to mother's milk; but, unless this is done, it will be found, in the majority of instances, to prove but a poor substitute for the natural food. The majority of rules given on this subject are too complicated for practical use, but by simply diluting cow's milk with boiled water, lime-water, barley-water, rice-water, or oatmeal, the firmness of the curd may be prevented, and by adding sugar-of-milk we have a very good substitute for mother's milk. Cream should also be added, as cow's milk is not so rich in this particular to commence with, and the addition of the water further reduces its strength. The specific gravity of cow's milk will average 1029, but, unfortunately, there is no instrument which will indicate its purity or quality. It is claimed that while lactose, salts, and casein increase the specific gravity of milk, fat and cream, being lighter than water, decrease its specific gravity; therefore, if cream be removed the specific gravity will be increased, and in order to bring it back to the standard, 1029, water may be added—that is, cream may be removed from, and water added to, the same milk, and the specific gravity will remain unchanged. A rough test can be made, however, which will in a measure determine the quality of the milk. A tall, graduated glass cylinder should be filled with the milk to be tested, which, after standing ten or twelve hours, should if pure throw up at least ten per cent. of cream and ought not to deposit any solid matter.

The question as to whether milk should be given fresh or boiled is one that should receive some attention. There is no question but that the heat of sterilization robs the nuclein of the milk of its vital properties to some extent, but where we are dependent on the dealer who receives his supply of milk from the country and has it in his dairy a number of hours before it is delivered to his customers, it should be either sterilized, pasteurized, or boiled; but where it can be had fresh and free from bacteria it can be used in the raw state and can be warmed sufficiently by the water with which it is diluted, and it is thought in this way to be more nourishing and more easily digested.

I do not think it is wise to habitually peptonize milk for healthy children, as their digestive organs, not being called on for full duty, are, I fear, weakened; and the careless manner in which the sterilizing of

milk is frequently done makes it many times rather harmful than beneficial, as it makes the coagula of casein in cow's milk much harder to digest.

I never advise the use of milk from a single cow, in the city, unless the cow is owned and fed by the parents or friends of the child, but advise that the milk be taken from an honest dairyman and drawn from the large can he usually has in his wagon, feeling that the milk from a good herd of cows is less likely to be injurious than if taken from any one cow of the same herd; and preferably from the can, unless each family supplies and cleans its own bottles, as those supplied by the dealer are frequently not any cleaner than they ought to be.

I have long objected to the use of condensed milk in my practice, but have been compelled to submit to its use over and over again, and have seen children who seemed to do as well on it as on any other artificial food, especially during the summer months when the milk they were depending on would be sour many times when it was received. Several years ago, as you will no doubt all remember, some of the clergy of our city succeeded in limiting the dairymen to one delivery of milk on Sunday, and in stopping the ice dealers from supplying ice on Sunday to their customers at all, insisting that the consumer should lay in a sufficiently large supply on Saturday to last until Monday—not knowing or caring, perhaps, that their action would deprive many poor persons of the use of this luxury, and would compel them to find a substitute for the cow's milk on which their children were living, which many of them have done and are now using condensed milk, not only for their children but in their coffee.

My objection to the use of condensed milk is that while the infant will fatten on its use, it is usually found to be pale and flabby, and does not, many times, have strength enough to carry it through childhood. By the addition of cream and the water from barley or rice, or a thin oatmeal gruel, we can improve it in this particular.

It is hardly necessary for me to say much or anything about the various patented preparations, each more marvelous than the other, as I very much prefer milk or some of its products for the artificial feeding of children. Those, however, which contain a smaller per cent. of fat than does a healthy mother's milk are more prone to cause disturbances of a developmental character, observed most frequently in the osseous system; hence rachitis, which is a comparatively unknown disease in rural districts where children enjoy the hygienic requirements of pure air, sunlight, and wholesome food, is found to be not uncommon among the crowded and badly-fed families in city tenement houses where anti-hygienic conditions prevail.

It is claimed that in Japan there is no artificial feeding of children,

and that milk, being an animal product, is excluded as a food, and the Japanese mothers are, therefore, compelled to suckle their babies themselves, which they do until their children are five or six years old, the mothers not menstruating during the first two years of lactation. The principal food of the mothers, and of the children after they are old enough, besides the everlasting rice, is composed of fats and oil of fish, seaweeds, and other products of the sea. No wine or beer ever enters into her diet, and the great reward Japan is said to reap from this care is the entire absence of rachitis. It is also claimed that the total abstinence of the Japanese from drinking cold water has made typhoid fever unknown in that country, where the water is said to be highly polluted, water being used by them for drinking only when it is boiled with tea.

The great principle at the foundation of all successful feeding of either adult or infant is that the supply of food be proportioned to the ability of the individual to digest. During infancy the stomach appears to be peculiarly liable to disturbances of its function, and these disturbing agents seem to be multiplied during the heat of summer—less so, of course, for those at the breast, but still errors in diet on the part of the mother or disturbances of her nervous system will cause changes in the milk and thus cause gastric disturbance. That this is correct can easily be proven, simply by giving the mother a dose of castor oil. In young children stomach digestion is but imperfectly performed at best and is of less importance than intestinal digestion. The stomach is more of a receptacle, into which the milk is received for coagulation, than a digestive organ, and the younger the child the less the stomach has to do, the milk simply being coagulated and passed into the intestines undigested. Even the digestion of the constituent of milk, milk-sugar, is now thought to be accomplished by a ferment found in the mucus of the small intestines.

Starr, in his new work, "An American Text-book on the Diseases of Children," says: "The experiments in this direction convince us that the digestion of milk by the infant is nearly if not altogether accomplished in the small intestines, and explains why indigestion in the infant induces diarrhœa."

Excessive feeding is quite frequently the cause of intestinal indigestion, especially in artificially-fed children, for the reason that the food is literally poured into the stomach and intestines. The mother will many times give her child the bottle when she would not stop to nurse it. The overloading of the stomach in this way causes more work than the stomach is capable of performing; the food must, therefore, either be vomited up or passed on into the intestinal canal without being properly prepared, and thus cause intestinal indigestion.

I was called, a couple of years ago, to a case of this kind occurring in the family of a physician. The child, six months old, had just been brought home from the country and was suffering with a terribly offensive and curdy diarrhea, which had existed already for several weeks. The child was very much emaciated, very fretful, whining uneasily almost all the time, and would rarely ever sleep more than ten or fifteen minutes at a time, unless it was given large doses of paregoric or bromide of potassium. The father sent for me, as he had given all the medicines and all the foods he had ever heard of as being good for such a condition of affairs. He kept an Alderney cow in his stable, and, in addition to the pure milk which he was using, he was adding a tablespoonful of Mellin's food to each nursing-bottleful of milk, which would be offered to the child every time it cried, frequently several times in a single hour, and the bottle refilled every time it became empty, without regard to time. The father became very indignant when I suggested that he was giving the child too much food; that the indigestion which was causing the diarrhea would take care of itself if he would stop the Mellin's food and reduce the milk one-half by adding rice-water or simply boiled water, which he refused flatly to do; but after considerable talk he was induced to try my plan for a few days and was rewarded by having his child restored to health. Many times in the last few years I have entirely stopped the use of milk for a day or two at a time when children were suffering from gastro-intestinal indigestion. To such children I many times give a teaspoonful or two of beef juice several times a day and the water from toast bread, rice, or pearl barley; and while I have allowed all the water they wanted, I have returned but slowly to their regular, every-day supply of milk. And this is, perhaps, as good a place as any to call attention to the fact that a sufficient supply of water is frequently not given to young children.

Great care should be given not only to the preparation of the food, but to see that the bottle and nipple are kept thoroughly clean. The graduated nursing-bottle is the best, as it is smooth inside and has no tube to be kept clean. The black rubber nipple should be used, and turned inside out when washed. Many persons having charge of bottle-fed children are exceedingly careless in all these particulars. They may be careful enough in the preparation of the milk in the first place, but after filling a bottle they will allow a child to nurse from it several times before it is all gone, and, without cleansing the bottle, will refill it again and again, or will many times add fresh milk to what has been left over from a previous filling; and they are quite as careless with the nipple. If you have any doubts on this subject, turn a rubber nipple inside-out some warm day this summer and convince yourself.

A case occurred in my practice a few years ago, in which a little

more than the ordinary degree of carelessness was exhibited. A young woman volunteered to take care of her sister's children for part of a day, and in going to her house and finding the baby, nine months old, crying, picked up a bottle that had been filled the day before with raw milk—which was now quite sour, the curd having separated from the whey—and, shaking it up, gave it to the child, repeating this several times until the bottle was empty. It is hardly necessary to say that in about twenty hours the child was dead.

During the first week or two after birth the child should be fed every two or three hours, and will require about one ounce at each feeding, about half a pint a day—good milk, two drachms; boiled water, rice-water, or barley water, six drachms.

By the second week, and up to about the sixth week, it will require about one pint a day, and, unless the milk is first-class, it will be well to add sugar-of-milk and cream—sugar-of-milk, four grains; cream, one drachm; milk, four drachms; water, one and a half ounces.

At from about the third to the sixth month it will take nearly four ounces at each meal, nearly a quart a day—sugar-of-milk, one scruple; cream, two drachms; milk, one ounce; water, two ounces.

From this time on about the same proportions should be maintained, the quantity being gradually increased until three pints—perhaps a little more—are taken in twenty-four hours, the quantity of water being gradually reduced, or a thin oatmeal gruel can be substituted for the rice or barley-water. A small pinch of salt can occasionally be added. This gruel can be gradually thickened, so that by the time the child is ten or twelve months old it can have, say, two meals a day of oatmeal gruel and three of pure cow's milk.

It is better for the child up to this time to keep it from the table and not to allow friends or strangers to give it candy, cakes, or other food, but from this time on, potatoes and other suitable articles of diet can be added.—*The American Journal of Obstetrics*.

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THE INFLUENCE OF ETHER AND CHLOROFORM UPON THE KIDNEYS.

By D. N. EISENDRATH, A.B. M.D., Chicago.

Anesthesia produced in any way is dangerous, and how to diminish this by careful clinical and experimental observations of the action of the various anesthetics upon the chief organs of the body, has been the aim of investigators and clinicians for many years past. Clinically much more attention has been paid to the action of chloroform and ether upon the respiratory and circulatory organs than upon the kidneys. The accurate knowledge of their action upon the latter should be in the possession of every one who has occasion to employ anesthetics, be it in sur-

gery or any other branch of medicine, cannot be emphasized too strongly. Given a case of nephritis, or one in which a protracted anesthesia is necessary, the question immediately confronts us, Which shall it be, ether or chloroform? How do they act upon the kidneys? Will the use of the one or the other in any way jeopardize the life of our patient by exposing him to death from uremic poisoning? Under what conditions is the one more dangerous than the other?

To attempt to answer these very important questions shall be the object of this paper, considering not only the influence of these two anesthetics upon the healthy, but also upon the diseased kidney, for the latter concerns us most clinically; the action upon the healthy kidney, as my own and the observations of others show, being but slight and transitory.

In 1890, Dr. Lawrence Turnbull wrote: "It is of the greatest importance that attention should be given to the condition of the kidneys, and an examination of the urine made when an anesthetic is to be administered. Deaths, unaccountable otherwise, are due to this cause. In diseases of the kidneys, the blood being loaded with urea, the anesthetics invariably produce convulsions, coma, and death." Thomas A. Emmet was the first to call attention to the possibility of fatal suppression of urine in persons suffering from chronic nephritis by the use of ether. In his first experience, complete suppression and death occurred in three days from uremia in a patient suffering from chronic cystitis and probably renal degeneration. In 1881, W. F. Norris reported a case of death in convulsions, following ether anesthesia in a child suffering from fatty kidneys, in which these organs were found intensely congested. Weir¹ found traces of albumen ten times in forty patients after ether, the urine before the operation having been free from albumen. Millard and Gerster have reported cases showing that ether has an injurious influence upon patients suffering from Bright's disease, and recommended the use of chloroform under these conditions. Körte, of Berlin, collected 600 cases of ether anesthesia; in only six could he find albumen after the operation which had not been present before. In seven cases it was present both before and after the anesthesia, and not increased after it. Prof. Weir², in an article published a few months ago, gives the results of his observations in 188 cases of ether anesthesia. In ninety having no accompanying temperature rise, the urine was found normal sixty-eight times before and after the operation, in fifteen normal before, but abnormal after. In eight of the latter there was only a trace of albumen, albumin from 1 to 10 per cent. three times, accompanied by casts. Casts alone were present four times. In four the urine was abnormal, both before and after the operation, the abnormality not being increased by the anesthesia. In two others there was a decided increase

of the abnormal constituents, in one from 3 per cent. to 10 per cent. albumen, in a second, from a trace and granular casts to 15 per cent., and a few granular casts. In a third case, in which there had been 5 per cent. before, there was a decided decrease after the operation. That an accompanying temperature has but little influence is shown by the fact that in ninety-eight of Weir's cases with fever, only twelve cases showed abnormal urine after the operation, and then only slight changes.

Dr. George B. Wood³ found experimentally in dogs that the kidneys become markedly congested during ether anesthesia, and almost invariably if the narcosis had been protracted only fifteen minutes and the dog then killed, it was possible to demonstrate cloudy swelling of the nuclei and contents of the secreting cells, those of the convoluted tubules being primarily affected.

Selback⁴ etherized dogs, rabbits, and cats, finding that in the first two there was no discernible influence upon the kidneys even after anesthesia of long duration and repeated day after day. In one cat he found a marked degree of fatty degeneration, but in another only a trace of such a change, in spite of a much longer anesthesia.

Fueter⁵ also failed to find any microscopical changes in animals which he anesthetized with ether. The specimens of Dr. Wood were examined by Prof. Guiteras, so that his finding of cloudy swelling offsets the negative testimony of the last two observers. In 200 cases of ether anesthesia Kelly and Ghiskey⁶ found hyaline and granular casts five times before and eighteen times after, granular eleven times, hyaline after the operation, in 23 per cent. albumen was found before, in 33 per cent. after the operation. Butter⁷ only found it once in 500 ether narcoses, Roux four times in 115 cases before and after the operation. Fueter⁸ examined the urine of 150 patients and never found it after, where it had not been present before the operation. Barendsfield⁹ found albumen only once in 150 patients after the operation. I shall try to show that the chemical examination alone is of but relative value, and the clinical observation of the influence of ether and chloroform is incomplete without a microscopical examination of the urine.

Recognizing this fact, recent German articles on the subject all include careful microscopy of the urine. Wunderlich¹⁰ found albumen in 6.9 per cent. of 60 ether cases, not present before the operation. In 15 out of 61 cases he found casts in the urine when the same was free from albumen after the operation, having been normal before. When casts were present before, an increase occurred through the anesthesia. Deaver and Frese¹¹ similarly examined the urine of 62 patients for several days before and ten days after the operation; 16 remained normal, 42 showed hyaline casts, renal epithelium, blood and pus corpuscles. Two deaths from uremia occurred, one in a case of castration for hyper-

trophied prostate, the other after removal of the breast in a woman sixty years old. Equally as much work has been done in determining the influence of chloroform upon the kidneys. Bouchard¹² and Laborde¹³ observed albuminuria in dogs and cats after hypodermic injections of large doses of chloroform. Path¹⁴ and Foth¹⁵ found a high degree of fatty degeneration of the kidneys in animals whose death had been caused through chloroform. There was also exudation into the glomeruli, and many hyaline and granular casts in the lumina of the tubules. The report of five cases of microscopical examination of the kidneys after protracted chloroform anesthesia by Dr. Eugen Fränkel¹⁶ have greatly aided in clearing up this somewhat dark subject in the human being. He found a marked degree of necrosis of the epithelium of the renal cortex with foci of fatty degeneration. These changes as observed by myself in Dr. Fränkel's laboratory, are most marked in the convoluted tubules.

Rindskopf¹⁷ found albumen and casts 31 times in 93 cases of chloroform anesthesia; in 6, albumen; in 6 others, both albumen and casts; 19 times, only casts. In 8 cases there were distinct epithelial casts, in 10 renal epithelium. Wunderlich¹⁸ found traces of albumen only in 11.5 per cent of 52 cases after the operation; in 34.8 per cent. casts were present alone; i. e., albumen is twice as frequent after chloroform as after ether anesthesia in the proportion of 11.5 to 6.9 per cent. respectively. Alessandri¹⁹ found albumen in 10-20 per cent. of 300 cases of chloroform anesthesia, lasting two or three days. Friedlaender²⁰ found it frequently, increasing in amount if present before. In order to verify these observations, most of which show the injurious influence of ether and chloroform upon the kidneys, both healthy and diseased, I examined the urine of 130 patients, at the suggestion of Drs. Schede and Sick, while an interne on the surgical division of the New General Hospital at Hamburg. Of this number 70 were chloroform, 60 ether anesthetics. The method employed was to examine freshly voided or catheterized specimens of the urine several days before and for an interval of from four to ten days after an operation. The specimens were examined microscopically and chemically; for the former the sediment was rapidly obtained by means of a centrifugal apparatus; for the latter, i. e., to test the presence of albumen, four tests were used, viz., heat, nitric acid, ferrocyanide-acetic acid and the Spiegler re-agent, bichloride of mercury, the last named being one of the most delicate ones for albumen. No cases were investigated in which any operation on the bladder was performed, or in which cystitis existed. Similarly, no urine was examined in which the patient had shown any signs of sepsis, or in which there had been severe hemorrhage. When urates were present in such abundance as to obscure the microscopic examination, the urine was rejected.

Thirteen of the 130 contained albumen before the operation. In 8

of these there was an increase of this abnormal constituent after the operation, 4 after chloroform, 4 after ether. In 2 of the former the increase was from a trace to over 1 per cent., both of these being cases of carcinoma of the uterus. The other two were a nephrorrhaphy for floating kidney, the other an old congenital dislocation of the hip, in which there was suspicion amyloid disease. In one well-marked case of amyloid kidneys there was an increase from 2.5 mg. per liter, Esbach, of albumen before, to 10 mg. after the ether anesthesia. This disappeared gradually within two weeks, rising again to 3.0 mg. six weeks after the operation. At this time a second operation was performed, the anesthetic used being chloroform. The increase now was from 3.0 mg. to 10 mg. per liter, Esbach, i. e., almost exactly the amount after the ether anesthesia. This case was one of an old congenital dislocation of the hip which had been operated upon several times, suppuration of the wound occurring. In a case of chronic interstitial nephritis in which a trace of albumen was present before a chloroform anesthesia, there was no increase.

In 15 cases, 25 per cent., after ether, in 23 cases, 32 per cent., after chloroform, traces of albumen appeared after the anesthesia. It disappeared in a much shorter interval after ether, generally twenty-four hours after operation. Microscopically, hyaline, granular and even epithelial casts, as well as renal epithelium, were found in urine free from albumen. This showed that it is absolutely essential to examine the urine both microscopically and chemically, in order to determine the influence of an anesthetic upon the kidneys. In 17 cases, 28.3 per cent., casts were found after ether; in 15 cases, 21.4 per cent., after chloroform anesthesia subsequent to the operation, the urine having been free from these elements prior to the same.

The casts were found hyaline, granular, blood and renal epithelial. Fatty degenerated and normal renal epithelium were frequently found, but only counted as such when in addition to the usual characters of this variety, the urine was free from bladder, vaginal and other kinds of epithelium. In the forty-eight patients, in whom albuminuria first appeared after the operation, hyaline and granular casts were found accompanying it twenty-one times, twelve after chloroform, nine after ether. In thirteen cases casts were present both before and after the anesthesia, seven after chloroform, six after ether, the number being increased after both varieties of anesthesia. My conclusions were as follows:

1. An already existing albuminuria is increased by an ether anesthesia more frequently than by chloroform.

2. Albuminuria occurs in a slightly larger percentage of cases after chloroform has been administered than after ether, the urine in such patients having been free from albumen before the operations.

3. The influence upon amyloid kidney is alike for both anesthetics.

4. Casts and other renal elements appear in the urine with almost equal frequency, but disappear more rapidly after ether than after chloroform.

5. The after effects of prolonged chloroform anesthesia are much more deleterious upon the normal kidney than those of ether.

That these after effects are very harmful was first shown by E. Fränkel¹⁶, who found that after death from prolonged chloroform anesthesia the secreting renal epithelium is in a condition of marked coagulation necrosis. During the clinical observations which I have just reported, I observed a case similar to those which Fränkel reported. A laborer, sixty-four years old, was admitted to the medical side of the hospital on account of a chronic bronchitis. He had an inguinal hernia which had always been easily reducible. Suddenly this became strangulated and he was transferred to the surgical division of Dr. Sick, where he was operated upon within three hours after the strangulation had been noticed. This interval was so short a one that auto-intoxication can be excluded. The cecum, appendix and a mass of omentum were found in the hernial sac showing incipient strangulation. They were replaced, a portion of the omentum removed. The canal was closed according to the Czerny method. No antiseptics were used. The operation lasted one and a half hours. The amount of chloroform used was three ounces. The urine before the operation was perfectly normal, the first specimen after it showed no albumen, but a renal epithelial and many hyaline casts, upon which there were many leucocytes and renal epithelia. The amount of urine in the first twenty-four hours was twenty-four ounces. There was no albumen upon the day following the operation, but a few granular casts. The urine was perfectly normal after this. There was no fever at any time. The wound healed by first intention.

Suddenly on the eleventh day the patient complained of shortness of breath and died within ten minutes. The post-mortem examination showed a recent thrombosis of the left femoral vein, the side opposite to that upon which the hernia was operated upon, and also a pulmonary embolism, the latter being the direct cause of death. The kidneys showed macroscopically only a turbid cortex, but sections stained with hematoxylin and eosin showed a marked coagulation necrosis of the epithelium of the convoluted tubules. This condition associated with the exudate into the glomeruli was first observed after protracted chloroform anesthetics by Dr. E. Fränkel. In the case I have reported the kidneys showed no evidence of any diseased condition which might have existed before the operation. Hence it is very probable that these changes must be ascribed to the action of the anesthetic.

Summing up the results of all of these observations we find that al-

though some observers have found that ether had almost no influence upon the kidneys, that the majority believe that upon the healthy organ, although it has a distinct influence, the same is only slight, consisting of albumen in traces, and all of the varieties of renal elements. The action is only transitory, lasting rarely more than twenty-four hours. Upon the diseased kidney ether has a most injurious influence, causing marked increase of the amount of albumen and of all formed renal elements. Chloroform acts upon the normal kidney in very much the same manner, but its effect is more lasting, varying in intensity according to the length of the anesthesia. In very protracted ones it can even cause such marked changes in the renal tissues as to seriously threaten life if not be the actual cause of death, as shown by Dr. Fränkel in his cases. Upon the diseased kidney, although chloroform acts the same upon the amyloid form, its influence on the other varieties of nephritis is far less injurious than ether, although observations on this point are not plentiful enough to make an absolute statement.

Therefore, considering these facts, one must conclude that ether is indicated in protracted anesthesia, provided that the contraindications to its use on the part of the lungs and heart do not prevent. In cases of nephritis without secondary degeneration of the heart muscle which would be a contraindication to the use of chloroform, the latter is to be preferred to ether.

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PROCEEDINGS OF SOCIETIES.

A SPECIAL ACTION OF THE SERUM OF HIGHLY IMMUNIZED ANIMALS AND ITS USE FOR DIAGNOSTIC AND OTHER PURPOSES.

No. 355 of the proceedings of the Royal Society contains an abstract of an article on this subject by Mr. Herbert E. Durham, communicated by Dr. Sherrington. The following conclusions, he says, are the outcome of an inquiry into the nature of Pfeiffer's reaction, which was made at the suggestion and under the guidance of Professor Max Gruber, of Vienna. The communication deals with the effects produced upon microbes in vitro by the serums of highly immunized animals, even when extremely dilute. This portion of the inquiry was carried out mainly in the bacteriological laboratory of Guy's Hospital.

1. A remarkable series of effects are produced on an emulsion of actively motile microbes by the addition of minute quantities of potent kinds of serum.

2. These effects have been observed with the cholera vibrio, a variety of other vibrios the typhoid bacillus, the *Bacillus coli communis*, and the *Bacillus pyocyaneus*.

3. It is highly improbable that the phenomena are limited to the groups and species here named. Further observation is requisite upon other motile, as well as the non-motile bacteria.

4. The most prominent of the effects thus produced consists of an immediate aggregation of the bacteria into clumps; this is combined with loss of motility. Marked inhibition of growth also occurs.

5. The formation of the clumps can be detected readily by the naked eye. Eventually they gravitate to the bottom of the tube containing them.

6. A complete action is obtained when all the clumps settle down, leaving a perfectly clear fluid. The time required for settling varies somewhat with different organisms, as also according to the amount and potency of the serum used.

7. The least quantity of serum which will give a complete reaction in about one hour forms a convenient standard. A highly potent serum will react thus in one-per-cent. solution, which is a convenient unit.

8. The more intense the action of the serum, the more rapid and the more complete are the changes which ensue.

9. By means of the intensity of action in varying dilutions, two or more samples of serum, or of freshly drawn blood, may be gauged according to their potency.

10. Normal serum, and the serum obtained by immunizations with totally unrelated groups of organisms do not interact upon the unrelated microbes, so far as present observation shows.

11. The action of cholera serum upon more or less closely related vibrios may be complete or nil. A series of gradations in intensity of reaction has been observed with cholera serum and vibrios of other species, and vice versa.

12. The action of such serum cannot therefore be regarded as specific; it is better named special or specialized.

13. The limit of the absolute value of such serum tests for the diagnosis of cholera vibrios has yet to be determined.

14. All the typhoid bacilli from nineteen different sources hitherto observed react with typhoid serum; none of them react with the *Bacillus coli* serum.

15. Of the *Bacillus coli* varieties hitherto proved, some do not react with one sample of *Bacillus coli* serum.

16. The agreement in action of the typhoid bacilli points to the use of the method for diagnostic purposes. Given a young culture and typhoid serum, a diagnosis can be made in a few minutes.

17. As shown by serum experiments, the variation within the *Bacillus coli* group is greater than that of *Bacillus typhi* races.

18. By the method described, more delicate changes can be observed than with such methods as plate cultivations, and the fallacies thereof are avoided.

19. A vibrio and a vibrio serum which will give a complete reaction in vitro will also give a positive result in Pfeiffer's reaction (e. g., *Vibrio Iwánoffi* and *Vibrio berolinensis* with cholera serum).

20. It is not worth while performing Pfeiffer's test unless a complete reaction has been obtained in vitro.

21. In the method described, the whole series of changes, if any, are before the eye the whole time. In Pfeiffer's method the changes can only be seen by removing samples from their hiding place in the guinea-pig's peritoneal cavity. The extent of possible fallacy from using the peritoneal fluid of a living animal is not yet defined. Professor Pfeiffer himself admits that the animals vary to some extent according to their condition of health.

ABSTRACTS.

FIFTY APHORISMS ON ALCOHOL.

By E. J. KEMPF, M.D.

Aphorism 1. By alcohol is meant the representative of a class of chemical compounds having in common certain characteristics.

2. Alcohol is produced by fermentation of saccharine substances, from which it is separated by distillation.

3. Alcohol is a transparent, colorless, mobile, and volatile liquid of a characteristic, pungent and agreeable odor and burning taste. Specific gravity 828.

4. Fusel oil, an amylic alcohol, an oily, nearly colorless liquid, is an impure and very poisonous substance.

5. Whisky is made of corn, wheat, or rye, by distillation of the fermented grain. It has an amber color, a distinctive taste and odor, and its specific gravity is 930. Whisky varies in the amount of fusel oil it contains.

6. The following table is accepted as reliable concerning the per cent. of alcohol contained in alcoholic liquors commonly sold and used:

Brandies, gins, and whiskies, ...	48 to 56	per cent.
Sherry and port, ...	20 to 33	"
Claret and hock, ...	8 to 11	"
Ale and porter, ...	6 to 10	"
Beer, ...	4 to 6	"
Stout, ...	4	"
Sweet wine, ...	10 to 17	"

7. Fifteen grains of alcohol per two pounds of the body-weight is considered the limit per day of health; 30 grains of alcohol per two pounds causes intoxication; and 120 grains per two pounds will cause death in from twenty-four to thirty-six hours.

8. The physiological action of all alcoholic liquors does not differ from pure alcohol in the same stage of dilution. But pure alcohol diluted is less toxic than impure whisky, or any other impure alcoholic drink. Brandy being a purified wine is in a diluted state less toxic than the wine. Alcoholic liquors may be adulterated in such a way that they are more toxic than pure diluted alcohol of the same per cent. Red wine is more intoxicating than white wine, not because it contains more alcohol, but because the latter is produced by the fermentation of

the grape juice, whereas the red wine is the product of the juice, skin, and pips of grapes.

9. The physical constitution, the stage of health, and the condition of the mind have much to do with the quantity of alcohol a person can stand.

10. There are conditions and diseases occurring in the human system when alcohol may be used as a medicine and as a food, and proves of great benefit, often saving life if properly used.

11. In some conditions, such as poisoning from snake-bites, large quantities of alcohol can be taken into the system without causing any effect except counteracting the poison already in the system. In such cases it acts as an antidote.

12. In other conditions, such as the rheumatic diathesis, the smallest quantity of alcohol is hurtful to the human system. For this reason the physician makes it a point to forbid rheumatic patients all alcoholic liquors of any kind or in any quantity.

13. The toxic quality of alcoholic drinks is not thoroughly evident when there is no kidney nor liver trouble, nor a diathetic disease. Healthy subjects easily eliminate these toxic substances, which under certain circumstances may even be valuable as occasional stimulants. In other words, death does not readily occur from the acute toxic effects of alcohol unless there is some constitutional defect.

14. The greatest portion of alcohol taken is used up in the system. Only about sixteen per cent., even if taken in large quantities, is excreted through the breath, the skin, and the kidneys.

15. Alcohol, it is supposed, is stored up in the system. It has been found in the ventricles of the brain, and has been distilled from the brain substance.

16. In small doses alcohol increases the action of the heart and cutaneous circulation; a slight rise of temperature is observed and all the functions are for a time stimulated.

17. A considerable dose of alcohol exhilarates, excites, and slightly intoxicates.

18. A large quantity of alcohol causes loss of muscular power, impaired co-ordination of voluntary movements, and rambling incoherence.

19. A poisonous dose of alcohol produces profound insensibility, stertorous breathing, and muscular resolution. For this reason alcohol is classed with the narcotics. The poisonous dose of alcohol cannot be estimated.

20. Alcohol produces a sensation of heat on the skin followed by inflammation. It hardens the same by coagulation of its albumen and the abstraction of water.

21. In small amounts alcohol increases the temperature of the body.

In larger doses it lowers the same from two to four degrees, Fahrenheit scale, the normal temperature being 98.5° . This is due to an excess of heat dissipation caused by the drug. The waste of alcohol absorbed by the system produces less heat than the waste of the carbo-hydrates (fats), which is not used when there is alcohol in the system to be burnt up. The capillary dilatation and the free sweating produced by the alcohol also helps to lower the temperature of the body.

22. Alcohol diminishes the power to resist cold.

23. Alcohol increases the flow of saliva and aids digestion when taken in small amounts. It produces a feeling of warmth in the stomach, and the alcohol being quickly absorbed the warm feeling passes over the body. A larger quantity causes a congestion of the stomach, gives rise to a pathological secretion, a gastric catarrh, epigastric pain, vomiting, purging, gastritis, and a degenerative change.

24. Small doses of alcohol increase the heart-beat, and large amounts depress the same, both through a direct cardiac action. The arterial pressure rises and is depressed in the same way. Alcohol in small quantities stimulates the heart, increasing its action in frequency and force, and causing a dilation of the cutaneous capillaries and those of the brain; witness the flushed face, the glistening eye, and the increased animation.

25. In a poisonous dose of alcohol the heart's action is lessened, but the heart is the last to succumb. After volition and voluntary motion stop, and the voluntary muscles are paralyzed, and respiration ceases, then the heart finally gives way and quits beating.

26. In large doses alcohol enhances coagulation of the blood. In toxic quantities it destroys the coagulating power of this fluid, causing a separation of the hemoglobin from the corpuscles. In this way it brings on a toxemia.

27. The amount of alcohol absorbed varies and is practically unknown. The drug lessens the excretion of tissue waste both in health and disease. It diminishes the absorption of fats, and increases the action of the kidneys. In large amounts it produces cirrhotic changes, especially of the liver and the spinal cord.

28. In small doses alcohol has little or no effect on the respiratory functions. In large amounts it produces a depression of both rate and depth of the respiration through a direct action on the centers in the medulla oblongata. The death "from a drunk" is caused by paralysis of the muscles of respiration.

29. Alcohol is a narcotic which spends its powers chiefly on the nervous system. It diminishes or suspends the functions of the cerebrum after a preliminary stage of excitement.

30. In small amounts alcohol excites and in large doses depresses both the peripheral, motor, and sensory nerves.

31. Excessive quantities of alcohol cause a spiral degeneration of the axis-cylinder of the nerve fibers.

32. Reflex action is at first increased and afterward diminished by an influence exercised by the drug upon the spinal cord and the nerves.

33. A small amount of alcohol stimulates the cerebral functions and a large quantity depresses and then abolishes them.

34. Alcohol causes a lack of co-ordination by depressing both the brain and the spinal cord.

35. Toxic doses of alcohol produce hyperemia of both brain and spinal cord, especially of the lumbar enlargement of the latter.

36. The primary effect of alcohol on the brain is stimulation, increasing the functional activity of the brain—ideas flow more freely, senses are more acute, muscular movements are more active; next, the activity changes to excitement—ideas become incoherent and rambling, the muscular movements uncontrolled and inco-ordinate, an over-stimulation of the cells of gray matter.

37. A poisonous dose of alcohol causes the functions of the brain to be suspended, and complete unconsciousness ensues, the reflex movements cease, the functions of organic life are feebly performed, and the centers presiding over the movements of respiration and circulation are finally arrested.

38. The sympathetic system is especially affected by alcohol, as shown by the increased blood pressure in the first stage followed by capillary dilatation, and marked fall of pressure in the latter stages of alcoholic intoxication.

39. The pneumogastric or vagus is the cranial nerve absolutely essential to life, because of its functions in connection with the heart and lungs, and its relation to the sympathetic system of nerves. Alcohol paralyzes the centers of this nerve and thus produces death by stoppage of the respiration and, last, of the heart-beat.

40. Signs of poisoning from alcohol are (a) odor of breath, (b) contracted or dilated pupil, (c) muscular resolution, (d) slow, sighing, irregular, stertorous breathing, (e) laxness of the muscular system, (f) abolition of reflex movements, (g) stupor and coma, (h) death.

41. Treatment of poisoning from alcohol consists of, (a) evacuation of the contents of the stomach with the stomach-pump (nature often does it by vomiting), (b) inhalation of ammonia, (c) cold to the head, (d) warmth to the body, (e) faradism of the muscles of respiration.

42. Post-mortem, (a) hyperemia of gastric mucous membrane, (b) distention of right cavities of heart and of the great venous trunks, (c) hyperemia of cerebral meninges, (d) serous effusion into the ventricles and arachnoid spaces.

43. Alcohol may produce toxemia, which may show itself in insane

impulses, acute insanity, delirium tremens, dipsomania, and chronic insanity.

44. Alcohol may and does predispose the habitual user to acute diseases.

45. The habitual user of alcohol cannot overcome the effects of acute diseases as readily as the abstainer.

46. Alcohol if habitually and excessively used may cause diseases of the kidneys, liver, stomach, lungs, heart, spleen, pancreas, and of the cerebro-spinal system of nerves. These diseases may consist of inflammations or degenerations.

47. Alcohol increases the ravages of tuberculosis, syphilis, scrofula, rheumatism, and other diathetic diseases, and persons suffering from these diseases cannot easily eliminate the toxic substances of alcohol.

48. Alcohol is not necessary to the healthy person, even as a stimulant in fatigue.

49. Alcohol may and does bring on a habit in the system so that the user becomes a slave to the drug, but only in such as are predisposed to it by idiosyncrasy, heredity, or degeneration of the will power of the brain.

50. Alcohol is a useful drug, but should not be used habitually, no more than should opium or any other drug.

[NOTE. Being asked to serve as an expert on alcohol in a damage suit brought by a widow against a saloon keeper for selling whisky to the husband, which it was alleged caused his death, I formulated the foregoing aphorisms as a guide in testifying.—The American Practitioner and News.]

THE TECHNIQUE OF MAUNSELL'S METHOD OF INTESTINAL ANASTOMOSIS.

(New York Medical Journal, December 14, 1895.) By Frederick Holme Wiggin, M.D.

The writer, at the request of Mrs. Maunsell, has revised an article written by Dr. Maunsell, which gives the technique of his method of intestinal suture.

After the preparation and anesthetization of the patient, a median incision is made in the abdominal wall below the navel, or if the site of the disease or injury can be localized, the incision is made over that site. The portion of intestine to be excised is then located and brought outside of the cavity, together with about six inches of healthy intestine on either side. It is next emptied of its contents above and below the diseased part by passing it between the finger and thumb and gently compressing it. The empty gut is then clamped on either side of the diseased portion at points six inches distant.

The general peritoneal cavity is shut off by flat sponges rendered sterile and wrung out of a hot saline solution, and the exposed portion of the bowel should be protected by the same means. The portion of intestine to be removed is excised by means of a V-shaped incision, which has its apex in the mesentery and its lateral borders on either side of the diseased point. The mesenteric vessels are ligated before being cut, by passing a needle armed with catgut around them and tying it, or they can be ligated as they are divided.

The dividend ends of the intestine are washed with a hot saline solution, followed by a small quantity of a fifteen-volume solution of hydrogen dioxide, and the proximal and distal ends are united primarily by means of two temporary sutures, the first placed at the mesenteric border, and the second directly opposite at the highest point of the superior border. These are tied and left with long ends.

A longitudinal incision, an inch and a half long, is next made in the superior border of the larger intestinal segment, two inches from its severed end, by pinching up the intestinal coats between the finger and thumb, and dividing them with a narrow-bladed knife.

The long ends of the temporary sutures are caught up and drawn through the opening until the ends of the segments of the bowel are invaginated and made to appear through the incision as concentric rings. The ends of the long sutures are then held by an assistant while the sutures, twenty in number, are placed and tied. A fine, straight needle armed with a strand of horse-hair is used, and is passed through all the coats of the bowel and through both sides about a quarter of an inch from the dividend ends. The suture is caught up by forceps, divided in the middle and tied at once on either side. The temporary sutures are then cut off, the cut ends of the bowel are dusted over with either iodoform or acetanilide, and the invaginated portion is reduced by means of gentle manipulation accompanied by slight traction. The edges of the longitudinal opening are turned in, and it is closed by Lembert sutures passed through the peritoneal, muscular, and submucous coats.

An anastomosis of segments of ileum and colon may be effected by passing three temporary sutures, one at the mesenteric border, a second through the side of the larger segment at the point where the superior border of the smaller segment touches it, and a third is passed through the highest free end of the larger segment. The ends of the sutures are drawn through as before, traction is made, and the free edge of the larger segment is inverted and invaginated, being accompanied by the smaller segment which is only invaginated. If the difference of calibre between the two segments is great, a V-shaped portion of the convexity of the larger segment may be removed. Gastro-enterostomy is performed as follows: A portion of the jejunum is drawn out, emptied

of its contents and clamped. A portion of the greater curvature of the stomach is also drawn into the incision and the jejunum is fastened to it by several Lembert sutures in such a way as to lessen strain on the permanent sutures. An incision is then made in the superior border of the gut and a corresponding opening in the stomach an inch above the greater curvature and parallel to it. The extreme ends of these wounds are united by sutures which are tied and left with long ends. An opening is then made near the center of the stomach, the wounds in the bowel and the stomach are invaginated through it and sutured, as already described. The invagination is then replaced and the slit in the stomach closed by Lembert sutures.

The author has found, in his various experimental intestinal anastomoses performed in accordance with this method on dogs, the following points in the technique to be of consequence:

1. The longitudinal slit which is made in the segment of bowel having the greatest calibre (proximal or distal), and through which the invagination occurs, should be located at least two inches from the cut end of the bowel.
2. The mesentery of both segments must be included in the first temporary suture which is passed at this intestinal border; this prevents sloughing of the bowel at this point.
3. The sutures should be placed at least a quarter of an inch from the cut intestinal edge; they should be interrupted, about twenty in number, and should not be drawn too tightly when they are tied.
4. The best suture material for this work is carefully tested and prepared horse-hair.
5. The needle best adapted to this work is a round, straight one (milliner's, Nos. 6 to 9).
6. The invagination after the sutures have been placed must be carefully reduced, rather by manipulation than by traction, otherwise the sutures may cut out.
7. In closing the longitudinal slit, too much of the intestinal edges should not be turned in, or a contraction may result at this point.

STRICTURE OF THE FEMALE URETHRA.

Fischler (*Centralblatt für Gynäkologie*, No. 39, 1895) reviews the literature regarding stricture of the female urethra, and reports four cases. He states that text-books on genito-urinary diseases rarely refer to this condition, and very little information can be obtained from the literature. First, Herman, in 1887, collected and reported twenty-nine cases. Then in 1894, Kleinwachter reported three cases. Van der Walker states that stricture of the urethra occurs quite as frequently in the female as the male. The writer's cases were found among 4000

dispensary patients. All four appeared complaining of the symptoms of vesical catarrh. Case I.—The patient was 56 years of age, married, sterile, always healthy since typhoid fever, in 1891. She complained of painful and frequent micturition, associated with tenesmus. The urine contained considerable sediment, triple-phosphates, and amorphous urates. On examination the urethral mucous membrane was red, swollen, and slightly prolapsed. The urethra admitted a Hagar No. 2 sound. The constriction began one-fourth of an inch beyond the external meatus. The endoscopic examination showed a vertical stricture three-eighths of an inch from the external meatus, to the left and above which there was considerable erosion. The patient was treated by slow dilatation, and after three months was relieved of all symptoms. Six months later the stricture had not returned. Case II, 66 years of age, married, sterile. Since nineteen years had had pelvic inflammatory disease and for four years vesical catarrh. Examination showed senile atrophy of the genital organs. On the left and inferior surface of the external urinary meatus there was a cicatrix which produced a very marked stricture. A Hagar No. 3 sound could be introduced. The endoscope showed a cicatrix extending into the ureter for three-eighths of an inch. The patient is still under treatment. Case III, 44 years of age, married, IV-para, two miscarriages, always healthy. Since six years she had complained of frequently and painful micturition. On vaginal examination the left appendage was prolapsed and very tender. A No. 2 sound was introduced into the urethra, giving patient pain and causing a slight hemorrhage. The stricture began a half inch from the external meatus. The endoscopic examination showed a vertical stricture. To the right side of the endoscopic field there was a cicatricial tissue and to the left injured mucous membrane, the result of the dilatation. The fourth case was one of stricture of the external meatus, which was thought to be due to syphilis. She appeared at the clinic but once. Fischler believes that stricture of the urethra in women usually results from injury during labor or an external traumatism. It has been observed that it may result from tumors of the urethra as polypi, vascular and fibroid tumors, phlebectasis, carcinoma, and lupus. It is also possible that gonorrhea may be a cause, as reported by Herman, nine cases. The writer agrees with Kleinwachter that since gonorrhea of the urethra is so very frequently seen in every dispensary practice and stricture so very rarely it is scarcely to be included as a cause. Herman describes eight and Kleinwachter one case as senile stricture, the patients being between 53 and 70 years of age. Herman thought that in these cases it was the result of a general fibroid thickening or induration of the urethra. The first two cases reported by the writer were elderly women, but there was no general fibroid thickening of the mucous membrane. He is unable to give a sufficient cause for the stricture in three of the cases.—Univ. Med. Magazine.

CASTRATION FOR PROSTATIC HYPERTROPHY IN SWEDEN.

Dr. Axel Euren reports in the *Upsala Läkareförenings Förhandlingar* of December 23, 1895, six cases described before the Society, to which two have since been added.

A Case of Gastrotomy for the Removal of Hair-ball; Recovery.

(*Journal of the American Medical Association*, February 1, 1896.)
By W. L. Allen, M.D., Davenport, Iowa.

A hair-ball was removed from a female, aged sixteen, and had the following dimensions: diameter, cardiac to pyloric extremity, nine and a half inches; entire length, including duodenal part, seventeen inches; circumference at pyloric extremity, eight and a half inches; circumference at greater curvature, eight and a half inches; circumference at cardiac extremity, five and a half inches. The girl had been in the habit of eating her hair since she was three years old, and up to two years ago. The large size of the foreign body did not interfere with a fair degree of health.

THE PATHOGNOMONIC SIGNS OF CONGENITAL SYPHILIS.—Dr. Silex.—Among the various signs which have been considered as pathognomonic of hereditary syphilis, the most important are parenchymatous keratitis, especially when associated with certain other symptoms indicative of syphilis (perforation of the tympanic membrane, excessive development of the frontal bumps, Hutchinsonian teeth, articular and osseous lesions), and peribuccal radial folds, remnants of mucous patches. Among dental abnormalities I regard one as particularly characteristic, viz., a gray or greenish color of the upper incisors, with wearing out of the central part of their cutting edge.

Prof. Busch.—I do not deny that subjects affected with congenital syphilis may present some irregularities of the teeth, more particularly as regards the upper incisors, but these peculiarities are never sufficient by themselves to permit of diagnosing syphilis.

Dr. Blaschko.—Congenital syphilis is manifested, as Dr. Silex has pointed out, by folds of the skin radiating around the mouth. These folds, when of syphilitic origin, are recognizable by the fact of their appearing on the lips in the form of white lines.

The abnormalities of the teeth described by Hutchinson are of but slight value for diagnostic purposes, except that the wearing out in the middle of the upper median incisors appears to be pathognomonic of syphilis, no other disease presenting the same localization.

I agree with Dr. Silex that parenchymatous keratitis in the majority of cases is dependent on hereditary syphilis. I have met with this variety of keratitis in girl of eighteen, affected with grave urticaria, which has recently become hemorrhagic.

Neither cicatrices around the mouth, however, nor abnormalities of the teeth or parenchymatous keratitis are alone sufficient to justify the diagnosis of congenital syphilis.

Prof. G. Lewin.—The dental abnormalities described by Hutchinson are met with also in subjects who have never had syphilis. On the other hand, of 260 syphilitic patients under my observation, only three presented Hutchinsonian teeth.

Moreover, I am unable to account for the importance attached in this respect to wearing out of the upper incisors. Why should congenital syphilis attack these teeth rather than the lower incisors, for instance?

Nor do peribuccal folds, in my opinion, have anything to do with hereditary syphilis, an affection which never determines longitudinal ulcers.

Prof. Hirschberg.—I have had occasion to treat about 1,500 children suffering from congenital syphilis. My observations are in accordance with those of Hutchinson.

The affected incisors are thinner than the others at the neck. Moreover this is a genuine loss of dental substance, and not merely the result of erosion.

A large number of syphilitic patients, it is true, never present this phenomenon, but all those in whom I have met with it were suffering from congenital syphilis.

Dr. Köbner.—I share fully Prof. Hirschberg's opinion as to the importance of the dental changes described by Hutchinson in the diagnosis of hereditary syphilis. Parenchymatous keratitis, on the other hand, is not pathognomonic, nor is keratitis punctata.

Nevertheless, even in the presence of Hutchinsonian teeth, parenchymatous keratitis and peribuccal cicatrices, it is an extremely difficult matter to differentiate congenital syphilis from syphilis acquired in infancy. Congenital syphilis gives rise also to cutaneous and osseous lesions and lesions of the buccopharyngeal cavity, which are rather easily recognized.

Dr. Brandt.—Numerous observations have convinced me that Hutchinsonian teeth are not pathognomonic and have no value for diagnostic purposes, as I am enabled to show you in the case of several children, all of whom present these dental malformations, without the slightest trace of syphilis.

AN EPIDEMIC OF EXTRAGENITAL SYPHILIS.—Dr. Gebert:—A woman, who is the mother of six children in good health, was found to be suffering from a syphilitic eruption, though her husband presented no trace of a specific lesion. On investigating the

origin of this affection, it was recognized that the primary lesion had occurred in the nipple, showing that she had been contaminated by her suckling infant. The child had contracted syphilis in a neighboring family, in which four children, a boy of ten, another of eight, a girl of fifteen, and another of nineteen, all suffered from syphilis. The disease had been transmitted from these children to the nursling either by kissing or by the common use of some objects.

The source of this epidemic of syphilis was found to be the older sister of these children, who had contracted a genital syphilitic chancre from her lover.

Lastly, an infant belonging to a third family was also infected by using the nursing-bottle of the first child referred to.—The Medical Week.

A CASE OF SUDDEN DEATH FROM AIR EMBOLISM FOLLOWING AN ATTEMPT AT ABORTION, By Louis Mitchell, M. D., Coroner's Physician, Chicago. Mrs. F. D. W——, aged twenty-seven, had borne two children, and had one miscarriage at three and one-half months, the latter about one year previous to the time of which I write. On the morning of October 1, she was found lying unconscious on the bed, with her feet on the floor. Some water was given her, but she was unable to drink. She then commenced to froth at the mouth, had a "spasm," and died in a few minutes. One week previously she had informed her mother that she was pregnant. A much-battered linen catheter, No. 10, with the stylet in situ, was found in the folds of her dress, but no syringe, water, or anything of that sort was discovered.

Necropsy, six hours after death, showed the body to be that of a well-nourished young woman; there were no marks of violence; rigor mortis was but slightly developed, and the pupils were semi-dilated. On opening the body adhesions were found at the apices of both lungs, which contained small tuberculosis foci; the remaining portions of the lungs were congested. The stomach was about half-full of partly digested food. The liver, kidneys, spleen and brain were normal microscopically. The veins of the mesentery and omentum contained blood separated by clear spaces; the columns of blood varied from one to three centimeters in length. Pressure on the vessels caused these clear spaces to move to and fro, pushing the blood before them. The same appearance was noted in the gastric and coronary veins, but not in the vena cava nor pulmonary arteries. The pericardial sac was empty, smooth, and shining. On grasping the heart it felt resilient as though "squeezing a rubber ball but partly filled with air." On incising the right ventricle, the cavity was found filled with an admixture of blood and air, which frothed out of the opening. The blood seemed thoroughly churned up with air, and the clots were neither numerous nor large. The auricle

also contained a quantity of this frothy blood; the left side was empty; the heart itself was normal. The uterus was fifteen centimeters long and contained a male embryo about ten weeks old (eleven centimeters). There was no hemorrhage in the vagina, but the uterine cavity contained a small quantity of blood. The membranes were perforated and were separated on the right and anteriorly over an area of 4.5 by 5 centimeters. The right ovary contained a recent corpus luteum.

This adds another to the rather scanty list of cases of air embolism occurring during pregnancy, labor, and the puerperium. Hektoen,* in reporting an interesting case of a similar nature, has given a resumé of the literature so recently, that it seems only necessary to direct those wishing more information to his article. A cursory search through the *Index Medicus* fails to show any cases since.

It seems unlikely that the patient introduced the catheter unaided, and, as before remarked, no traces of apparatus for injection were found. However, no evidence was to be had as to any accomplice.

No bacteriological examination was made, hence the gas-producing bacilli are not excluded; however, the peculiar circumstances attending the death, and the short interval between death and the necropsy, seem to preclude their participation.—Medicine.

THE RELATION BETWEEN PLEURISY AND TUBERCULOSIS.—The relation existing between pleurisy and tuberculosis has for a long time attracted considerable attention. It is observed that pleurisy frequently follows fully-established phthisis, and that phthisis in many instances develops after an apparently cured pleurisy. Of ninety cases of acute pleurisy treated by Henry Bowditch, of Boston, between 1849 and 1879, thirty-two died of or had phthisis (Osler's "Practice of Medicine," 1892). These clinical observations are confirmed by post-mortem records. In the Shattuck Lecture for 1893 (*Boston Medical and Surgical Journal*, July 20, 1893), Osler stated that an analysis of the post-mortem records of 101 successive cases from the wards of the Johns Hopkins Hospital in which pleurisy was found, showed that thirty-two, or nearly 32 per cent., were definitely tuberculous.

When pleurisy and tuberculosis of adjacent structures coexist in the same patient, it is generally admitted that the one may hold one of four relations to the other: (1) the pleura may have been involved simultaneously with the other structures in the tuberculous process; (2) a primary tuberculous pleurisy may have infected secondarily adjacent organs, such as the lung; (3) primary tuberculosis of the lung or bronchial glands may have excited a pleurisy; (4) a primary, non-tuberculous

* In the *North American Practitioner*, iii, p. 99, of May 11, 1895.

pleurisy may have so reduced the resistance of the lung that the latter became a favorable soil for the development of phthisis. In many cases the tuberculous nature of the pleurisy is apparent, the disease being undoubtedly secondary to advanced tuberculosis elsewhere, as in the lung, bronchial glands, peritoneum, or Fallopian tubes. In other instances, however, what appears to be a simple primary pleurisy is followed sooner or later by symptoms of pulmonary tuberculosis. In the latter group of cases the initial lesion, generally in the lung or thoracic lymph-gland, may have been so small as to escape detection, or the pleurisy may have been primarily tuberculous, or the phthisis may have resulted from injury to the lung induced by a simple pleurisy. The last view, although not unreasonable, has little but tradition to support it. The view that pleurisy, apparently simple or idopathic, is most frequently caused by tubercle bacilli which have invaded the pleura directly or have gained access through the medium of an unrecognized tuberculous focus elsewhere, although asserted by many competent observers, has been criticized on the ground that most patients with acute pleurisy are completely restored to health, and that, moreover, a bacteriological examination of the pleuritic exudate rarely reveals the bacilli. These objections, however, lose much of their importance when it is remembered that tuberculosis has not the same fatality in all parts of the body. Patients with tubercular adenitis, osteitis, or peritonitis frequently recover. Again, tubercle bacilli are rarely discovered in the exudate of pleurisy known to be tuberculosis. Of nine cases of serous pleurisy studied by Ludwig (*Deutsche Archiv für klinische Medizin*, Vol. L, 1893), two were caused by pneumococci, two by staphylococci, and five were free from bacteria. Of the last, however, four were tuberculous.

Recently an important contribution to the subject under consideration has been made by Eichhorst (*Correspondenzblatt für Schweizer Aerzte*, No. 13, 1895). The observer, in order to prove conclusively that pleurisy is often excited by tubercle bacilli, made a series of experiments on guinea-pigs, injecting into the abdominal cavity of the animals one cubic centimeter of the exudate from every case of serous pleurisy. After six or eight weeks the animals were killed and their organs critically examined. Of the eleven animals inoculated only one developed glandular tuberculosis. As one animal, however, remained healthy after being inoculated with the serum of a patient who had pronounced pulmonary tuberculosis following shortly after an attack of acute pleurisy, the author concluded that the experiments were faulty in that he had not injected a sufficient quantity of the serum. A second series of experiments were therefore undertaken, the exudate being obtained from twenty-three patients who had been in good health when

they acquired the pleurisy and in whom no tuberculous lesions could be detected after the most careful examination. In the later experiments fifteen cubic centimetres of the serous exudate were injected into each guinea-pig, and as a result fifteen of the twenty-three animals, or 65.2 per cent., developed tuberculosis, while only eight, or 34.8 per cent., remained healthy. These results indicate that nearly two-thirds of all cases of acute serous pleurisy are of a tuberculous nature. Eichhorst believes that in most instances tuberculous serous pleurisy has its origin in tuberculosis of the bronchial glands. These experiments not only throw light upon the etiology of pleurisy, but also suggest an aid to diagnosis in obscure cases, especially when the nature of the disease is not indicated by the history, method of onset, clinical course, character of the fluid, or by bacteriological examination.—Editorial American Medical Magazine.

THE DIAGNOSIS OF CARCINOMA OF THE PANCREAS.—V. Engel reports (*Präger med. Woch.*), four cases of this affection in two of which the diagnosis was made *intra vitam* and corroborated by the post-mortem examination. A constant initial symptom is epigastric pain. Vomiting is usually absent, and the appetite is in no wise disturbed, a point of some value in differentiating carcinoma of the pancreas and stomach. Icterus is usually present; enlargement of the gall bladder was not noted by the author. Ascites and compressed phenomena of the large abdominal vessels was not manifestly present, notwithstanding the fact that the tumor in three cases was of large size; a fact of importance in the differentiation of hepatic disease. Glycosuria was not present in any of the cases, nor was there large quantities of fat in the feces. In one case, however, the administration of 200 grammes of cane sugar was followed by alimentary glycosuria. In the same case, the injection of 50 grammes of olive oil was followed by a large quantity of fat in the feces. The foregoing symptoms, with the demonstration of an epigastric tumor with manifest cachexia, permit of the diagnosis, carcinoma of the pancreas; without the demonstration of the tumor no certain diagnosis is possible.—*Centralblatt f. Innere Medicin.*

Guthrie Rankin remarks that in recorded observations of pancreatic lesions, it would seem that primary disease is the exception rather than the rule, and that when the pancreas is attacked its implication is usually secondary to pre-existing disease in the stomach, duodenum, liver or gall bladder. The leading symptoms in two cases reported by him were great emaciation, excessive weakness, paroxysmal pain, and in the later stages of the illness deep seated epigastric tenderness. While so much stress has been laid on the presence of fat in the alvine evacuations as characteristic of pancreatic disease, his two cases show that

even in advanced conditions of structural disease of the pancreas, that symptom may be entirely wanting. If to the above symptoms are added nervous disturbance, which can be referred to the vagus or sympathetic, the probability of the pancreas being the *fons et origo mali*, is strengthened; and if further corroborative testimony is afforded by a hard mass in the epigastrium, by glycosuria, by persistent jaundice without liver symptoms, by stools, which are greasy in appearance, or clay-colored without an obstructed bile duct to be found in explanation, then the diagnosis may be looked upon as practically certain, while the prognosis, unfortunately, is absolutely hopeless.—British Medical Journal.

HEART DISEASE IN CHILDREN.—Pott, in an examination of 30,000 children, found ninety-five cases of heart disease (Brit. Med. Jour.). Acquired heart disease is, in his experience, never primary, but always secondary to some acute infectious disease, particularly scarlet fever and acute rheumatism, occasionally to pneumonia. In early childhood the rarity of scarlet fever diminishes its importance in the causation of heart disease. The youngest case observed was a boy, aged three, in whom endocarditis developed in the second week of scarlet fever, leaving permanent mitral regurgitation. Rheumatic fever is the commonest cause in these earlier years, and the statements of other writers who assert the infrequency of rheumatic fever at this age are probably due to the difficulty of diagnosis causing it to be overlooked. Of seventy-eight cases of acute rheumatism with joint symptoms, twenty-one were under the age of two years. A frequent case of heart disease in children is the so-called masked rheumatism, a vague febrile condition associated with nasopharyngeal catarrh, enlarged cervical glands, enlarged spleen, herpes labialis and pains in the limbs, sometimes called herpetic fever. These symptoms subside under sodium salicylate and have sometimes been definitely associated with the onset of endocarditis and pericarditis. Owing, however, to the difficulty of proving their rheumatic origin, Pott has not included such among his rheumatic cases. Congenital heart disease, not including faults of development, may be due in some cases to an attack of acute rheumatism in the mother during pregnancy; one case is quoted in which there seemed to be such a relation. Congenital syphilis in some cases seemed to be the probable cause of the heart lesion. The frequency of acute miliary tuberculosis in children with congenital sight-side lesions is noted and the possibility of intra-uterine tuberculosis as the cause of the heart disease is suggested, though it seems more likely that the tuberculosis is favored by the heart disease.

MISCELLANEOUS.

ANTIVIVISECTION BILL IN CONGRESS.—HEARING BEFORE THE COMMISSIONERS OF THE DISTRICT OF COLUMBIA.

[SPECIAL CORRESPONDENCE TO THE MEDICAL NEWS.]

The antivivisection scarecrow has suddenly come to life again at Washington, D. C., and the Humane Society of the District of Columbia has succeeded in having a bill introduced into both houses of Congress which calls for immediate attention from the scientific and medical professions in every quarter of this country. As it is very difficult to procure copies of this bill for distribution, owing to the limited edition printed under the present law, the entire text of the bill in question is given here for the benefit of those whose active interest it should command.

Fifty-fourth Congress, First Session: } *S. 1552.*
 H. R. 4446.

IN THE SENATE OF THE UNITED STATES.

JANUARY 14, 1896.

Mr. McMillan introduced the following bill; which was read twice and referred to the Committee on the District of Columbia.

A BILL

FOR THE FURTHER PREVENTION OF CRUELTY TO ANIMALS IN THE
DISTRICT OF COLUMBIA.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That hereafter no person shall perform on a living animal any experiment calculated to give pain to such animal, except subject to the restrictions hereinafter prescribed. Any person performing, or taking part in performing, any experiment calculated to give pain, in contravention of this Act, shall be guilty of an offense against this Act, and shall, if it be the first offense, be liable to a penalty not exceeding one hundred and fifty dollars, and if it be the second or any subsequent offense, shall be liable, at the discretion of the court by which he is tried, to a penalty not exceeding three hundred dollars, or to imprisonment for a period not exceeding six months.

SEC. 2. That the following restrictions are imposed by this Act with respect to the performance on any living animal of an experiment calculated to give pain to such animal; that is to say:

(a) The experiment must be performed with a view to the advancement by new discovery of physiological knowledge, or of knowledge

which will be useful for saving or prolonging life or alleviating suffering; and

(b) The experiment must be performed by a person holding such license from the Commissioners of the District of Columbia as is in this act mentioned; and

(c) The animal must, during the whole of the experiment, be completely under the influence of ether or chloroform to prevent the animal feeling pain; and

(d) The animal must, if the pain is likely to continue after the effect of the anesthetic has ceased, or if any serious injury has been inflicted on the animal, be killed before it recovers from the influence of the anesthetic which has been administered; and

(e) No experiment shall be made upon any living creature, calculated to give pain to such creature, in any of the public schools of the District of Columbia; provided as follows, that is to say:

First. Experiments may be performed under the foregoing provisions as to the use of anesthetics by a person giving illustrations of lectures in medical schools, hospitals, or colleges, or elsewhere, on such certificate being given as in this act hereafter mentioned, that the proposed experiments are absolutely necessary for the due instruction of the persons to whom such lectures are given, with a view to their acquiring physiological knowledge or knowledge which will be useful to them for saving or prolonging life or alleviating suffering;

Second. The substance known as urari or curare shall not, for the purposes of this Act, be deemed to be an anesthetic; and

Third. Notwithstanding anything in this Act contained, no experiment calculated to give pain shall be performed on a dog or cat, except upon such certificate being given as in this Act mentioned, stating, in addition to the statements hereinbefore required to be made in such certificate, that for reasons specified in the certificate the object of the experiment will be necessarily frustrated unless it is performed on an animal similar in constitution and habits to a cat or dog, and no other animal is available for such experiment; and an experiment calculated to give pain shall not be performed on any horse, ass, or mule, except on such certificate being given as in this Act mentioned, that the object of the experiment will be necessarily frustrated unless it is performed on a horse, ass, or mule, and that no other animal is available for such purpose; and

Fourth. Any exhibition to the general public, whether admission be on payment of money or gratuitous, of experiments on living animals, calculated to give pain, shall be illegal.

Any person performing or aiding in performing such experiment shall be deemed to be guilty of an offense against this Act, and shall, if it

be the first offense, be liable to a penalty not exceeding one hundred and fifty dollars, and if it be the second or any subsequent offense, shall be liable, at the discretion of the court by which he is tried, to a penalty not exceeding three hundred dollars or to an imprisonment not exceeding six months; and any person publishing any notice of any such intended exhibition by advertisement in a newspaper, placard, or otherwise, shall be liable to a penalty not exceeding ten dollars.

A person punished for an offense under this section shall not for the same offense be punishable under any other section of this Act.

Sec. 3. That the Commissioners of the District may insert, as a condition of granting any license, a provision in such license that the place in which any such experiment is to be performed by the licensee is to be registered in such a manner as the said Commissioners may from time to time by any general or special order direct: Provided, That every place for the performance of experiments for the purpose of instruction shall be approved by the said Commissioners, and shall be registered in such manner as the said Commissioners may from time to time by any general or special order direct.

Sec. 4. That the Commissioners of the District, upon application as hereinafter prescribed, may license any person whom they may think qualified to hold a license to perform experiments under this Act. A license granted by them may be for such time as they may think fit, and may be revoked by them on being satisfied that such license ought to be revoked. There may be annexed to such license any condition which the said Commissioners may think expedient for the purpose of better carrying into effect the objects of this Act, but not inconsistent with the provisions thereof.

Sec. 5. That the Commissioners of the District may direct any person performing experiments under this Act from time to time to make reports to them of the result of such experiments, in such form and with such details as the said Commissioners may require.

Sec. 6. That the Commissioners of the District shall cause all registered places to be from time to time visited by inspectors without previous notice, for the purpose of securing compliance with the provisions of this Act, and shall appoint and authorize an agent of the Washington Humane Society to make such inspection, and may also appoint such special inspectors as they may think fit, either permanently or temporarily, who may be willing to act as such inspectors gratuitously.

Sec. 7. That any application for a license under this Act, and for a certificate to be given as in this act mentioned, must be signed by three physicians duly licensed to practice and actually engaged in practicing medicine in the District of Columbia, and also by the professor of

physiology, medicine, anatomy, medical jurisprudence, materia medica, or surgery in the medical department of any duly established and reliable school or college in the District of Columbia: Provided, That when any person applying for a certificate under this Act is himself one of the persons authorized to sign such a certificate, the signature of some other of such persons shall be substituted for the signature of the applicant.

A certificate under this section may be given for such time or for such series of experiments as the persons signing the certificate may think expedient.

A copy of any certificate under this section shall be forwarded by the applicant to the Commissioners of the District but shall not be available until one week after a copy has been so forwarded.

The Commissioners of the District may at any time disallow or suspend any certificate given under this section.

Sec. 8. That the powers conferred by this Act of granting a license or giving a certificate for the performance of an experiment on living animals may be exercised by an order in writing, under the hand of any judge of a court of record having criminal jurisdiction in the District, in a case where such judge is satisfied that it is essential for the purposes of justice in a criminal case to make such experiment.

This bill has been referred to the Senate and House Committees on the District of Columbia, composed of the following members:

SENATE COMMITTEE.

Hon. James McMillan, Mich.

“ J. H. Gallinger, N. H.

“ H. C. Hansbrough, N. D.

“ Redfield Proctor, Vt.

“ J. C. Pritchard, N. C.

“ Lucien Baker, Kas.

“ J. B. Wetmore, R. I.

“ I. J. Harris, Tenn.

“ C. J. Faulkner, W. Va.

“ C. H. Gibson, Md.

“ Jas. Smith, Jr., N. J.

“ T. C. Martin, Va.

Hon. A. O. Bacon, Ga.

HOUSE COMMITTEE.

Hon. Joseph W. Babcock, Wis.

“ Alfred C. Harner, Penn.

“ George M. Curtis, Iowa.

“ George W. Hulick, Ohio.

Hon. Alfred Milnes, Mich.

" R. C. Schannon, N. Y.

" J. H. Huling, W. Va.

" B. B. Odell, Jr., N. Y.

" G. L. Wellington, Md.

" J. D. Richardson, Tenn.

" H. W. Rusk, Md.

" James E. Cobb, Ala.

" E. E. Meredith, Va.

" Jo. Abbot, Texas.

Hon. Seth W. Cobb, Mo.

In accordance with custom, both committees have referred the bill to the Commissioners of the District of Columbia for consideration, and at present it is in their hands.

The antivivisectionists, it is understood, applied for a private hearing before the Commissioners, but the medical scientists of the District objected. Dr. Busey, as president of the District Medical Society, protested against any private hearings on the subject, and the Commissioner were thus led to appoint Thursday, January 30, as the time for a general hearing.

The Humane Society was represented by its Antivivisection Committee, as follows: Mrs. C. Kennedy, Mrs. H. B. F. MacFarland, Mrs. H. V. Boynton, Mrs. W. Knowlton, Miss Peet, Gen. Rufus Saxton and Mr. MacFarland. There were also present among the antivivisectionists: Rev. Dr. Power, Mrs. E. Totten, Gen. H. V. Boynton, Mr. W. Knowlton, and ex-Commissioner Douglass; and Dr. Leffingwell, of Cambridge, Mass.

The medical profession was represented by Drs. Busey, Magruder, and Kleinschmidt of the Committee on Legislation, District Medical Society; Surgeon General Sternberg and Dr. Walter Reed, of the U. S. Army; Dr. J. J. Kinyoun, of the U. S. Marine Hospital Service; Dr. D. E. Salmon, chief of the U. S. Bureau of Animal Industry, with his assistant chief, Dr. Brumbaugh, his bio-chemist, Dr. de Schneinitz, his pathologist, Dr. Moore, his medical zoölogist, Dr. Stiles, and Dr. Schroeder, doctor of the experiment station; Health Officer Woodward, Dr. G. Wythe Cook, Dr. Sowers and others.

Mr. Kennedy opened the discussion by reading the bill, after which he stated that there is no law at present in the United States regulating or prohibiting vivisection except in Massachusetts, where a law exists controlling experiments upon animals in the public schools. He then read extracts from the report of the English Commission on Vivisection of 1876, and spoke of the brutalities practised by scientists.

Mr. Ross Perry, one of the ablest lawyers of Washington, then followed with a lengthy address, which was evidently intended to be in sup-

port of the bill. Some of Mr. Perry's remarks are worthy of a moment's attention, coming from such a well-known man, and being so radical and hysterical in their character. They were received by the agitators with delight, and will undoubtedly be used by them hereafter in their pamphlets. He claimed in the most radical manner that the end attained did not justify the means used; that knowledge purchased at the price of sufferings of animals was purchased too high.

Dr. Busey was the first to speak against the bill. He remarked in a quiet, sarcastic manner, that he appeared before the Commissioners expecting to hear a discussion on the subject of vivisection, but as a matter of fact he had only heard long addresses in which the medical profession had been attacked as inhumane and brutal, and as liable to finally end by vivisecting idiots and criminals. He then directed attention to sections 2 and 6 of the bill which he claimed made the bill prohibitory, instead of regulating the practice.

At this junction the antivivisectionists showed that they intended to interrupt him as frequently as possible and thus try to gain time and points. Mr. Kennedy was the first to institute these tactics, but Dr. Busey soon succeeded in bringing him to silence.

Dr. Busey brought forward an array of facts in favor of vivisection which was evidently a surprise to the opposite party, and which came directly home to the women present by referring to the practical application of transfusion of blood in its relation to flooding after delivery, etc.

Surgeon-General Sternberg was the next speaker for the scientists, but by request, he ceded the floor to Dr. Leffingwell, of Cambridge, Mass., whose time in Washington was limited. The antivivisectionists evidently were disappointed by the remarks of the doctor, for he practically killed the bill for them, so far as the Commissioners are concerned. He admitted Dr. Busey's statements regarding the value of vivisection in science, and stated that if it were a question between the vivisection and antivivisection, he would stand by vivisection. He desired to see vivisection restricted, but admitted that the bill under discussion was not satisfactory to this end.

Commissioner Truesdell then suggested that Dr. Leffingwell submit in writing for consideration of the Commissioners any suggestions he had to make, and the floor was given to General Sternberg.

As soon as General Sternberg began to speak, the antivivisectionists resumed their tactics of interruption, one after another propounding questions or making statements calculated to lead the speaker away from his train of thought.

The discussion here became stormy in the extreme, and the constant interruptions so exasperating that Dr. Salmon protested against their continuance. After this, Dr. Sternberg was able to finish his remarks in comparative quiet.

About three hours had been occupied by the hearing, and when time for adjournment had arrived, only two of the opponents had had an opportunity to speak. The bill is still in the hands of the Commissioners, who will refer it back to the Congressional Committees for report to Congress.

Several important matters come up in connection with this bill in Congress: First.—Is not this the beginning of a concerted action on the part of the antivivisectionists in various parts of the country? The importation of Dr. Leffingwell from Cambridge gives some plausibility to this view. Second.—If such is really the case, is it not time for the scientific and medical men of the country to be on their guard in the various states, to see that no state legislature passes any bill which will seriously compromise scientific research? But if there is no organized movement of this nature, this bill, even if reported to the two houses, may be followed by serious results, for fanatics will be encouraged by the apparent "importance" of their movement, and we may look for the introduction of extreme measures in many of the state legislatures.

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MEDICAL NEWS AND NOTES.

SHOULD THE APPENDIX BE REMOVED IN EVERY CASE OF APPENDICULAR ABSCESS?

J. William White, after referring to many interesting and important points concerning appendicitis that need further investigation (University Medical Magazine, March, 1896), alludes to others that he believed had been settled. Among the latter are the following indications which call for operation:

Immediate operation is indicated whenever the onset of a case of appendicitis is marked by both suddenness and severity; whenever, during even a mild attack, the symptoms at the end of forty-eight hours are unrelieved or are growing worse; whenever, in cases seen later, a firm, slowly forming, well-defined mass is to be felt in the right iliac fossa; whenever at any time a sudden increase in the acuteness of the pain and a rapid diffusion of tenderness occur; whenever there is good reason for believing the appendix-infection to be tubercular in character; whenever attacks of any type have been numerous, or are increasing in either number or gravity, or have unfitted the patient for work or activity, or have caused local symptoms which are permanent and persistent, or have at any time put the patient's life in great danger.

These are not considered exhaustive, but represent in general those that are undisputed.

In regard to the very important problem of the proper procedure in cases of appendicular abscess, the author quotes his views as expressed in a previous contribution on this subject (*American Journal of the Medical Sciences*, January, 1894).

"If there is a circumscribed abscess, it is poor surgery to insist in every case and at every period upon finding and taking away the appendix in the face of all obstacles. In many cases of circumscribed abscess, and especially in those in which the appendix is bound down by adhesions in the depth of the wound, the surgeon should be content with evacuation, irrigation, drainage, and packing with iodoform-gauze. Persistent search for the appendix and attempts at its removal in these cases are attended with such danger of opening the peritoneal cavity that they are not to be recommended." His belief was, and is, that large numbers of cases demonstrate the truth of this proposition, that increasing experience shows to each operator that there are a not inconsiderable number of cases in which it is absolutely necessary to apply it, and that it should be placed among the facts regarding appendicitis which can be safely accepted by the profession.

Of thirty-seven cases in which the writer had operated and left the appendix there was not a single fatal result. A fecal fistula formed in two cases, and closed spontaneously and permanently in both. In but three has there been a recurrence, and in two of these the appendix was removed with the greatest ease; in the third it became obliterated.

In order to ascertain the practice of other surgeons who may be considered as among the foremost of American operators, White submitted his views, as quoted, to Drs. McBurney and Bull, of New York; Senn, of Chicago; Halsted, of Baltimore; and Richardson, of Boston; all of whom fully indorsed the position taken by the writer.

The article concludes as follows:

"It must be remembered that comparison is not to be made between such removal and purely medical or non-operative treatment.

"The comparison I desire to draw is between the routine method of insisting upon finding and taking out the appendix 'in all cases' and the really surgical plan of sacrificing non-essentials in an operation to avoid dangers threatening life; or of profiting by the accumulated experience of one's co-workers; and of aiming, first, at the recovery of the patient, and only secondarily at the performance of a theoretically 'complete' operation.

"If the profession at large will weigh the evidence before it as to this important point in surgical practice, there can be no doubt as to the decision which will be reached. Probably no one of us who, in his own person, had any of the above-mentioned indications for operation would refuse it; it is certain that in such event he would prefer to have the

appendix removed if it were possible to do so without adding to the risks of the case. These points are not under discussion. The question which every practitioner, and especially every operator, ought to ask himself is whether it is for the best interests of his patients that he should acquiesce in or try to live up to a rule which, in the face of the foregoing evidence, as to the resulting increase in mortality, asserts the possibility and the propriety of removing the appendix in all cases of appendicitis."

CIRCULAR OF INFORMATION REGARDING THE DANGER OF CASES OF DIPHTHERIA COMMUNICATING THE DISEASE TO OTHERS AFTER CONVALESCENCE.—Diphtheria is due to a germ known as the diphtheria bacillus. This germ is present in the membrane and in the secretions of the mouth, nose, and throat of cases of diphtheria. The disease is only produced by the reception of these germs into the mouth or air passages of other persons. The discharges from the nose and throat of cases of diphtheria containing these germs may be received on handkerchiefs, towels, bed clothing, carpets, rugs, personal clothing, toys, books, etc., dry, become pulverized and breathed in as dust, or they may be transmitted directly from the sick to the well through personal contact, as in the use of drinking-cups or eating-utensils which have been employed by the sick, or through kissing the sick, or through direct discharge of the secretions on the hands or face or clothing of the nurse or physician in attendance, in making applications to the nose or throat of the sick person. Thus, in numerous ways the germs find their way from the throat of the sick to the mouth or air passages of the well, and if then the conditions are favorable for the development of diphtheria in the throat of the person receiving them, after a varying period the disease is produced. Diphtheria only follows the reception of the germs in the throat if favorable conditions for their growth exist there. In many cases the germs remain for many days and increase in number in the throats of healthy persons who have been in contact with cases of diphtheria, without producing the disease. Well persons who have these germs in their throats may convey them to others who contract the disease while they themselves escape. During convalescence from diphtheria the germs of this disease often persist in the throat for many days after all signs of disease in the throat have disappeared, and after the individual is entirely well. Investigations show that in about thirty per cent. of cases they persist for three weeks or longer after the beginning of the disease; in fifteen per cent. for four weeks or longer; in five per cent. for five weeks and occasionally even for a much longer time. Experiments have shown that almost invariably these germs are virulent and capable of inducing the disease in others, so long as they persist in the throat, and persons having such

germs in their throats may convey the disease to well persons at any time. Observation, however, has proven that the chances of communication of the disease to well persons after complete convalescence are not great, excepting among children, who are far more susceptible to the disease and who are much more likely to become infected through the frequent introduction of articles into the mouth. The danger of communicating the disease to others after recovery is less than during the disease, because the number of germs is smaller and because the secretions are less abundant and not likely to be discharged so that they would be received by other persons. Where persons do not remain completely isolated, as they are strongly advised to do, until cultures made from the throat show the absence of the diphtheria bacilli, they should constantly remember the facts set forth in this circular and use every precaution to prevent the communication of the disease to other persons, and should be particularly careful in their relation and contact with children. Under no conditions will children whose throat secretions still show the presence of diphtheria bacilli be allowed to attend school of any kind, and under no conditions will adults be allowed to return to their occupation, where this involves immediate contact with children. [Signed] George B. Fowler, M.D., Commissioner of Health. By order of the Board of Health. Charles G. Wilson, President; Emmons Clark, Secretary.

AMERICAN DERMATOLOGICAL ASSOCIATION.

126 East Sixtieth Street.

New York, June 22, 1896.

The meeting will be held at the Hot Springs of Virginia, September 8, 9, and 10, 1896.

Everything will be done to make the meeting a success and several papers on interesting subjects have been already promised.

Dr. White will open a general discussion on the subject, "What effect do diet and alcohol have upon the causation and course of the Eczematous affections and Psoriasis."

Yours, etc.,

CHARLES W. ALLEN, Secretary.

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REVIEWS.

Transactions of the Southern Surgical and Gynecological Association, Volume VI. Eighth session, held at Washington, D. C., November 12, 13, and 14, 1895. Published by the Association, 1896.

Each meeting of the Southern Surgical and Gynecological Association is looked forward to as one of the important events of the year. The character of the papers read, the kind of membership which the

association possesses, and the Southern hospitality for which the association is justly famed, make it a privilege to read a paper before the association. In the present record of the transactions there are papers by a number of distant men, including Dr. John W. Wyeth, Dr. Henry O. Marcy, of Boston; Dr. Joseph Price, of Philadelphia; Dr. A. Vanderveer, of Albany, and others. Dr. Wyeth's address on "Dr. J. Marion Sims and His Work" was full of interest and information, which only a man related to Dr. Sims, as was the author, could write. The make-up of the book is uniform with the previous records of the transactions.

A System of Medicine by Many Writers, edited by Thomas Clifford Allbutt, M.A. M.D., LL. D., F.R.C.P., F.R.S., F.L.S., F.S.A., Regius Professor of Physics in the University of Cambridge, Vol. 1. New York: MacMillan & Co., London: MacMillan & Co., Ltd., 1896. All rights reserved. Price \$5 per volume.

It is always a perplexing matter to settle whether or not any particular system of medicine has sufficient distinctive claims over all the others that we possess, or to which we have access, to make us feel that we are justified in subscribing to the same. As a matter of fact, the whole field of medicine has been undergoing such kaleidoscopic changes in the past few years, that by the time the system of medicine has been completed and the total number of volumes furnished the reading public, many of the statements contained in the earlier parts of the work have undergone such marked changes, if not such complete contradictions, that the book must be used with considerable discretion, and by a man who is also in touch with what has been done since the publication. Of the various systems published in America in the last few years, none has probably been so widely known as the one which bears the name of a distinguished practitioner in one of the large cities; and we may add that it has been, as a matter of fact, a very short time since the completion of the same. We may also add that the work is probably in the hands of more practitioners in this country than any other two "systems." But, in spite of all this, in spite of the infinite care with which this special system was prepared in spite of the immense detail and the accurate knowledge which it contains, even the writer by whose name it goes has given his name since to a shorter and another system of medicine. All of this simply by way of introduction to the consideration, not only of this individual volume, but of the confidence that must obtain in the minds of the publishers as to the merits of a work, in order to justify an extended publication.

The present system will contain probably five volumes, and is to be complemented, so to speak, by a system of gynecology, under the supervision of Dr. Playfair. With the rationale of the association we

are not entirely in accord. At the same time, we are not prepared to grumble with a good thing, whatever may be its environment. The scheme of the volume before us is this: First of all, an introduction which is both philosophic and entertaining, and which presents considerable valuable general information in regard to medicine in the abstract. Division 1, *Prolegomena*. Under *Prolegomena* are individual articles of Medical Statistics, by Dr. Billings, who, by the way, is the only American contributor to this volume; *Anthropology and Medicine*, by Dr. Beddoe; *Temperament*, by Dr. Rivers; *On the Laws of Inheritance and Disease*, by Mr. Hutchinson; *Medical Geography of Great Britain*, by Mr. Haviland; *Inflammation*, by Dr. Adami; the *Doctrine of Fever*, by Dr. Burdon-Sanderson; *The General Pathology of Nutrition*, by Dr. Mott; *General Pathology of New Growth*, by Mr. Shattock and Mr. Ballance; *Principles of Drug Therapeutics*, by Dr. Leech; *Climate in the Treatment of Disease*, by Dr. Herman Weber and Dr. Michael G. Foster; *Artificial Aero-Therapeutics*, by Dr. Theodore Williams; *Balneology and Hydro-Therapeutics*, by Dr. Herman Weber and Dr. Parks Weber; *The Medical Application of Electricity*, by Dr. Louis Jones; *Massage*, by Dr. Kearsley Mitchell; *The General Principles of Dietetics in Disease, or the Food of the Sick*, by Sir Dyce Duckworth; *The Diet and Therapeutics of Children*, by Dr. Eustace Smith; *Nursing*, by Miss Amy Hughes; *The Hygiene of Youth*, by Dr. Dukes; *Life Assurance*, by Dr. Symes Thompson.

It will be seen by this statement of the contents of Division 1 that the scope of the work is almost unlimited.

Division 2 is entitled, "Fevers," and is divided into Part 1, in which Sir Joseph Fayrer writes an article on *Insulation, or Sun Stroke*; and Part 2, which is entitled, *The Infections*. Under the latter we have monographs entitled *The General Pathology of Infection*, by Dr. Kanthack; *Septicemia and Pyemia*, by Mr. Watson Cheyne; *Erysipelas*, by the same author; *Infective Endocarditis*, by Dr. Dreschfeld; *Puerperal Septic Disease*, by Dr. Playfair; *Furuncle Carbuncles*, by Dr. Melson; *Epidemic Pneumonia*, by Dr. Whitelegge; *Epidemic Cerebro-spinal Meningitis*, by Dr. Ormerod; *Influenza*, by Dr. Goodhart; *Diphtheria*, by Dr. Gee, Dr. Thornethorne, Dr. Kanthack, and Dr. Herringham; *Tetanus*, by Sir George M. Humphry and Dr. Sims Woodhead; *Enteric Fever*, by Dr. Dreschfeld; *Cholera Asiatica*, by Dr. MacLeod, Mr. Ernest Hart; Dr. S. C. Smith, Dr. Kanthack, and Mr. J. W. W. Stevens; *Plague*, by Dr. J. F. Payne; and, finally, *Relaxing Fever, or, Famine Fever*, by Dr. Rabagliati and Dr. Westbrook.

It would require another volume to enter into the details in regard to each of the articles of which we have given the titles. We can only say this, that from the standpoint of to-day, each paper presents the

very best up-to-date work of a well-recognized authority on the other side of the water; and the bibliography throughout gives not only the authorities consulted by the author, but also the authorities in which additional information can be found by the person who desires to go still further in his investigations. The articles on Inflammation, on the Doctrine of Fever, and on the General Pathology of Nutrition, are peculiarly full and instructive, and are alone worth the subscription price of the book. The publishers have done their work in a most acceptable way. The plates are as good as can be made, and the arrangement of the caption of the various articles is especially suited to ready and frequent reference. If the first volume is a fair index as to the volumes to come, no one will make a mistake in subscribing to the publication. We are not at all opposed to—indeed, we rather recommend—the dissemination in this country of the best ideas of the best thinkers abroad; not because what they may have to say is any more true or better than what men in our own country are constantly writing, but because the horizon of the reader is materially enlarged. We shall follow this system with considerable interest, especially as to the stability of it, for some years to come, as a book of reference.

Western Medical Review. A monthly journal of medicine and surgery, published by the Western Medical Review Company, Lincoln, Neb. Volume No. I, May 20, 1896.

The field of medical journalism is never too full to welcome a periodical which promises to assist and uplift the medical profession. The first issue of the present journal is a fair reflection of the course to be pursued in its future management warrants us in believing that the already large number of journals has not been increased by a useless addition.

The Sanitary Era is continued under the title "Modern Medical Science," and published at No. 466 West 151st street, New York city.

Weir's Index to the Medical Press, with an appendix; reviewing cases and articles of practical value to the progressive practitioner. A monthly journal devoted to the bibliography of medical literature. Frank Weir & Co., publishers, 321 West Forty-fifth street, New York. The title is a sufficient indication of the character of this publication, and it is our intention to refer to it after its first issue. To the literary medical man, to the thinking medical man, to the reading and practical physician, it is a work of great interest and value. It is to the medical press what the Surgeon's General Index is to the whole line of medical publications. We hope that it will receive the support it deserves, and that it will continue to give, in the same clear, accurate and legible way, information on the lines set forth in the title page.

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Articles for publication will be received with the understanding that they are contributed exclusively to this journal. Reprints will be furnished at actual cost, orders for which should accompany the manuscript. Authors of accepted articles may receive twelve copies of the issue in which they are published. Necessary illustrations will be furnished without expense to authors when suitable drawings or photographs are furnished.

UTILIZATION OF THE X-RAYS IN MEDICAL AND SURGICAL PRACTICE.

The lay press has brought the discovery of Prof. Röntgen so prominently before the public by sensational accounts of examinations of the interior structure of the human body, that physicians find it necessary to correctly inform themselves upon the real merits and extent of utility of this remarkable discovery. Moreover, it may be expedient sometimes to curb the unjustifiable enthusiasm of those who are constantly demanding information upon the application of the X rays to medicine. As an illustration of the absurd conception which even intelligent lay people entertain of their utility as a diagnostic means, may be mentioned an incident. A lady whose son has long been an inmate of an asylum for melancholia, applied to the writer for information regarding the probability of examining the brain of the poor unfortunate with a view to ascertaining its exact condition. The lady was greatly distressed when informed that so far as present knowl-

edge extended, a picture of the entire brain could not be obtained, and if it were obtainable, such aid would be of no avail in the cure of the existing malady. Doubtless similar instances occur to many of our readers. It may, therefore, be of interest to offer some recently obtained reliable data on the subject, inasmuch as it is the aim of this journal to keep its readers abreast of the advanced lines in all that pertains to the calling. The Medical Department of the Austrian War Office instructed Drs. Schjerning and Kraugfelder to investigate the extent to which Röntgen's X-rays may be utilized for medical practice, as well as for military surgery and medicine. The photographic and physical work was executed in the Imperial Technical Institute, by photographic pictures of anatomical and other preparations, and partly by those made on living parts. It was determined that these rays are capable of presenting to the eye parts having a thickness which exceeds considerably the average thickness of soft parts. The depth of layers capable of being penetrated is not yet mathematically ascertainable; but an attempt to light up with the X-rays a space of 23 centimeters of soft parts was negative. The limit of possible illumination of bone is decidedly larger.

Foreign bodies in the soft parts are easily demonstrated by the X-rays; next come the topographic-anatomical relations of separate portions of the skeleton, especially the connecting points of the joints within the soft parts. To this category belong joint deformities, bone defects of the extremities, luxations of joints, fissures and fractures of the bones, pseudarthrosis, hyper-peri and eostosal thickening of bone substances, resulting from hardening osteitis, and softening from osteomalacia. The softened portions of bones and the widening bones of ossification in rachitis; carion destruction of the joints, and changes in arthritis may then be presented to the eye. Aside from positive anatomical changes of position, the determination of surgical diseases of the bones demands careful, thorough consideration, and a cautious interpretation of the picture. Only by the aid of the old, well-recognized diagnostic methods, and scarcely ever by the shadow-picture alone, will it be possible to obtain a conclusive idea of the disease. The chief reason for this is the fact that the Röntgen pictures are only shadow-pictures, upon which the skin, muscle groups, ligaments, tendons, nerves and vessels appear in a smooth, clear twilight, without the slightest definitions or destruction of outline.

The importance of Röntgen's rays in military surgery cannot be overestimated on account of the possibility of finding foreign bodies, bullets, or parts of balls. Despite the enormous power of penetration of our new weapons, there will be found in future wars a large number of lodged pieces of ball or clothing, and these may be discovered by

means of the X-rays, rather than by the horrible probe. But even in cases in which it is not necessary to remove balls and in which the latter have become encysted without damage to the patient, it would be useful to determine their seat by the X-rays and enter it upon the records and discharge papers of the individual. In this way much trouble would be saved to the surgeon and much pain to the invalid, if an operative procedure would at some future time be indicated or called for.

The military surgeon may by these examinations also obtain information which would aid him in giving an opinion of the degree of incapacity, by enabling him to estimate objectively any functional disturbances, and also to estimate the value of the subjective complaints of the invalid.

With regard to foreign bodies which lie dormant and produce either no pain or such pain as may be easily borne, the surgical axiom to let it alone should not be violated; the physician may have the opportunity to reassure the invalid who has been made conscious of the presence of a bullet by means of this new discovery, and to protect him against a needless operation. These investigations of trustworthy observers are of great value, as are the following made by Hoppe-Seylex, in Kiel, on the utilization of the Röntgen rays in the diagnosis of arterio-sclerosis, who claims to have obtained tolerably satisfactory results. He subjected the amputated leg of a man suffering from pronounced arterio-sclerosis to the X-rays; the specimen having been preserved in a solution of hydrate of chloral, still presented the fresh color of the muscles, and no change in volume. The interosseous arteries could be plainly seen upon the photograph as two serpentine, narrow bands, one of which disappeared under the tibia. Besides its serpentine form and curves, the picture of the arteries showed a pronounced dark tint, in accordance with the thickness of the lime deposit. The author explains by the compacting of these lines the fact that such thin deposits as are found in vessels affected by arterio-sclerosis should present so decided an obstacle to the passage of the Röntgen rays. A large part of the bones is spongy and contains, besides the bony tissue, the osseous canals, etc., parts which are easily penetrated. Experiments on the living subject were equally successful. In the picture may be readily seen, running along the inner side of the fifth metacarpal bone, a narrow strip the size of a knitting needle, which would correspond to a branch of the ulnar artery. A short, similar strip, may be seen winding along the humerus, and disappearing between the two last metacarpal bones. On the radial side of the wrist may also be seen several serpentine bands, which probably correspond to the radial artery. Doubtless the improvements in the mechanism of the X-rays will enhance their value in the future. An X-ray studio has been

established in this city, which claims to apply the new discovery for physicians, and offers "to take pictures of any part of the human system." Doubtless the inventive genius of our electricians will soon elaborate methods and means for the practical utilization of this great discovery. In the meantime it would seem wise to accept only such facts as have been actually demonstrated by reliable observers.



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No. 3.

ORIGINAL ARTICLES.

EPIDEMIC TYPHOID FEVER.*

By WILLIAM S. GORDON, M.D., Richmond, Va.,

Professor of Physiology, University College of Medicine, Richmond, Va.

My design in this paper is not to treat the subject exhaustively, but to present a running commentary on about twenty-five cases of typhoid fever occurring in an institution for boys of which I was at one time the attending physician. The disease made its appearance early in September, 1895, and prevailed until the close of the year. If dysentery and gastro-intestinal disturbances be included, the whole number of cases would amount to thirty-five or forty. Under the measures adopted, with the intelligent and unremitting attention of a trained nurse, we were fortunate in having no deaths.

The first cases owed their origin to the use of polluted well water; while others, occurring later in the epidemic, were due, in my opinion, to the use of water from a polluted stream. The cases developed after the usual incubating period—two or three weeks from the entrance of the poison into the system; and the arguments for the correctness of my views as to the cause of the outbreak are irrefutable. It is needless to discuss this portion of the subject.

I had a hospital erected for the patients, and the directions regarding disinfection and other hygienic measures were faithfully followed by the head nurse.

The grouping of the cases enabled me to observe, to the best advantage, the difference in the course of the disease, the symptoms, and the response to treatment in individual cases; and the demonstration that a common infection may produce many exceptions to the ordinary and classic symptoms of the typical disease was conclusive. I am also further

*Read before Richmond Academy of Medicine and Surgery, July 14, 1896.

established in my belief that the cases of so-called typho-malarial fever are, in the large majority of instances, cases of atypical typhoid fever, the difference in symptoms being partly accounted for by the concentration of the poison and the susceptibility to it of the individual constitutions.

In most of the cases the invasion was abrupt, resembling that of malarial fever or the grip. Epistaxis occurred in a few cases. Constipation was oftener present than diarrhoea. The highest temperature was $105.3-5^{\circ}$; the most rapid pulse about 130. Headache was common, and either a decided chill, or chilliness, was the rule at the onset. The cutaneous eruption occurred in several cases. Right iliac or abdominal tenderness, with tympanites, was almost uniformly present. The brown, dry tongue was noticed here and there, while marked nervous symptoms—muttering delirium and semi-coma—occurred in a few instances, and active delirium in two. Sweating was observed occasionally, and bronchitis was rarely absent. The fever was, at times, irregular; but the morning remission and afternoon rise were quite constant. In one or two cases, the pulse-rate was slow and the beat sluggish, and, I might say, distrustful. Serious hemorrhage from the intestines occurred in only one case.

The shortest duration was about ten days—the longest nearly two months. Post-typhoid insanity of a mild type occurred in one instance. Sore feet was a prominent symptom in one case, and was much complained of by the patient.

Several patients had pain in the joints. Obstinate constipation developed in three or four cases, requiring mechanical means for its relief.

Such was the general course of the epidemic.

My routine plan of treatment was to put the patient to bed immediately, reassure and quiet his mind, have his clothing changed and his skin cleansed, order a liquid diet—milk, or milk and broth alternately—and quinine to gentle cinchonism if the symptoms of typhoid fever were not sufficiently marked to justify a positive diagnosis.

My experience with quinine leads me to believe that it will almost infallibly cut short a malarial fever, but never typhoid. In the latter disease, I have seen the drug reduce the temperature, as it often does in other fevers; but, on the other hand, I have also seen the temperature rise after its administration. This result may be due at times to the natural course of the disease, but at others it is doubtless owing to the irritating effect of the agent upon some constitutions. My rule, therefore, is to discontinue it if the fever does not yield in several days, and not to resume it until convalescence, when with some preparation of nuxvomica or other tonic it is of great service.

Sweet and buttermilk were the basis of dietetic treatment, especially the former. Buttermilk, or sweet milk, with strained oat-meal gruel, served a good purpose in the case characterized by constipation and mild symptoms; and in these I also used occasionally steamed eggs, beef extract, and fresh crackers soaked in milk. If the fever rose, I returned to milk alone or milk and broth. When diarrhea was present, milk and barley gruel, or milk with arrow-root, proved very serviceable; or milk and lime-water alone. In other cases, a pinch of salt in the milk rendered it agreeable, and evidently more digestible. The free use of pure water was ordered. The adaptation of the diet to the requirements of individual cases is, in my opinion, one of the most important measures in the successful management of typhoid fever.

Chloral-thymol was used freely with good effect.

For the fever, sweet spirit of nitre, spirit of minderus, and tepid baths were used. The patients were bathed by running oil cloths under them and sponging freely when necessary. These measures sufficed to keep the skin and kidneys active. Constipation was relieved by enemata every other day, or every day, according to indications, with an occasional dose of oil if required. Diarrhea was untreated except when the passages were more than three or four in the twenty-four hours. Bismuth, or bismuth and paregoric, answered every purpose. The brown, dry tongue and meteorism were in nearly every instance relieved by an emulsion of turpentine, to which the bismuth, or bismuth and paregoric, was added, when required to keep the diarrhea in check. Salol was employed in several cases, and appeared to act well.

Epistaxis had to be controlled in one case by the injection of a strong alum solution into the nares. Cold clothes to the head mitigated the cephalalgia.

Turpentine stupes were used for abdominal pain. I wish to say a few words with regard to the use of turpentine. There is no one drug which, it seems to me, meets so many indications, and my increasing experience with it leads me to have an increasing respect for its power. I do not claim infallibility for it, but it is a stimulant, a diuretic, an antiseptic, a healer of intestinal ulcers and of inflamed mucous membranes in general, and a styptic. In my hands, it has rarely failed to accomplish some good—notably in lessening the meteorism and restoring the dry, brown tongue to its moist condition.

In many cases, dilute phosphoric acid appeared to render the patient more comfortable. It is a mild feeder of the nervous system and a refrigerant. Alarming hemorrhage occurred in one case. The nurse had been prepared for this, and narcotized the patient promptly with paregoric, administering turpentine, withholding all food for twelve hours, applying an ice-bag to the abdomen, and enforcing absolute re-

pose of the body and mind. Insomnia was met with cold sponging, accompanied with stimulation in cases of exhaustion. The bromides acted well on several occasions. I did not have to use opiates, but have used them with marked beneficial effect in nerve exhaustion and delirium.

Bronchial symptoms were treated with turpentine plasters. One of the youngest cases had to be fed by enemata for a short while. In this case, and one or two others, the heart was so weak at times that I almost despaired of being able to strengthen it, but the free use of whiskey and strychnine accomplished all that could be desired.

One of the worst cases was that of a young man who assisted the head nurse in her arduous work. He walked into my office with the disease well developed, and was sent to the Virginia Hospital, where, under the skillful attention of Dr. Vaden, the house physician, and the nurses, he had a long but successfully fought attack of the disease. I do not know whether he disregarded my orders as to the polluted water, or whether he was negligent in handling the patients and received the poison at close range, so to speak. In this case, Cheyne-Stokes respiration was marked for several days, while as much as one-fifth of a grain of strychnine within two or three hours was, on one occasion, with other measures, required to sustain his flagging heart. In this case, also, the meteorism yielded promptly to salol and gave no further trouble. The slowing and strengthening effects of digitalis on his heart were noticeable.

I do not believe that we have any specific treatment for typhoid fever. Hundreds of physicians have hundreds of remedies, but the disease is apt to run its course. The very fact that excellent results are reported from so many different kinds of treatment is sufficient proof that nothing has the same influence for good in typhoid infection that quinine has in malarial diseases. I do not believe, therefore, that typhoid fever is aborted in the sense that the germ is destroyed; but I do believe that its course may be abridged or modified by appropriate treatment adopted—in the early stages, especially—of the disease. Furthermore, there can be little doubt in the mind of the close observer that intestinal antiseptics and elimination are very important elements in correct treatment. This does not imply such a purgation as would tend to irritate an inflamed or ulcerated bowel, nor such an attempt at antiseptics as would be likely to kill the patient and not injure the germ, which is also engaged in the effort to kill.

This epidemic convinces me additionally of the facility which water offers for the conveyance of the typhoid infectious material. It cannot be held that the germs may not be borne at short distances in the atmosphere, breathed in and lodged in the alimentary canal. Air can

float germs as well as water, but from the very nature of things it can be easily seen how much more liable the system is to be infected by the germs of typhoid fever in water than in air. The rapid multiplication of the germs in water and milk must be borne in mind.

As already previously intimated, the study of this, as well as other epidemics, proves conclusively that one poison does not, in each case, produce necessarily the same set of symptoms. The very opposite symptoms, in typhoid fever, of diarrhea or constipation, may be noted. In one case, the fever may run a classical course; in another, it may hardly rise above the normal, or else be sub-normal. And the remark applies to other symptoms. Before we finally sanction the name of a new disease—typho-malarial—it must be clearly defined to what extent the symptoms of atypical typhoid fever may be observed.

I do not claim that my methods in the treatment of the present epidemic are superior to those adopted by clinicians of wider experience. In the treatment of any one symptom, various remedies, acting practically in the same way, may be employed. I have laid down only the general lines of therapeutics, as I conceive them, while I reiterate my fixed belief that until a true typhoid germ-destroyer is discovered, we must depend upon careful hygienic measures, intelligent nursing, and judicious intestinal elimination and antisepsis.

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TRANSLATION.

“TREATMENT OF PUERPERAL ECLAMPSIA.”

Translated for Gaillard's Medical Journal.

By H. McS. GAMBLE, Ph.D., M.D.,

Moorefield, W. Va.

When we read the different works that treat of puerperal eclampsia and when we compare the different statistics, we are struck with the fact that the so numerous kinds of treatment yield on the average results almost similar. This is because in fact the forms of this disease are multiple and because in many cases it is so benign that all kinds of treatment succeed. In others, on the contrary, it is so grave that therapeutics are powerless, and, in spite of the most careful management the patients rapidly die.

We do not mean to say by this that the efforts of the physician are useless, and in many cases, we will be fortunate enough to owe our success to the treatment that may have been instituted.

We also believe that the treatment ought not to be the same in all cases, and that one subject of eclampsia whose paroxysms are continu-

ous, and whose temperature is elevated should not be treated like another whose paroxysms are interrupted and who has a normal temperature. Some patients are in a perpetual agitation; others, on the contrary, are in a perpetual coma. We think, then, that the treatment of eclamptic patients should not be according to a formula, and that the remedies should be varied according to the nature of the case.

If authors differ as to the question of the curative treatment of this disease, they are agreed in affirming the importance of the prophylactic treatment. We will commence by describing what this treatment consists in, then we will enumerate the different means that the physician possesses for combating this affection. Finally, we will close in setting forth the course to be pursued from the standpoint of the labor.

PREVENTIVE TREATMENT.—It is well known how important it is to examine the urine of all pregnant women: This is because, in fact, every albuminuric subject is threatened with attacks of eclampsia. If this albuminuria is recognized one has every chance of avoiding these complications by instituting a suitable treatment.

If the pathogenesis of eclampsia is still very obscure, we are nevertheless familiar with certain particularities that accompany its evolution. For a long time it has been known that this is due to a toxæmia and that it is only when it comes to the question of the nature of the poison that authors are not in accord; whether it be the urea, the carbonate of ammonia, the coloring matters of the blood or microbe toxins, it is known that the convulsive attacks are due to a poison.

Besides, the experiments of Tarnier and of Chambrelent, repeated many times, have proved that the serum of eclamptics is very toxic. This toxicity it may be proceeds from an exaggerated production of the poisons by the organism, it may be from an incomplete elimination of these dangerous products. So, the lactated regime fulfils all the conditions of a good antitoxic remedy.

In fact, milk is a complete food, and contains only the minimum of poison possible. Moreover, it aids the elimination of the dangerous matters, since it is one of the best diuretics known. For this reason the lactated regime is an excellent prophylactic. Theory in this instance conforms with practice, and since M. Tarnier has insisted upon the importance of subjecting albuminuric subjects to the absolute milk regime, those pregnant women who are watched over during their pregnancy do not become eclamptic.

It is known, besides, that in the opinion of this author, a treatment maintained during eight days suffices to avoid this dangerous malady.

Whenever one shall demonstrate the presence of albumen in the urine of a pregnant woman, then he will not hesitate to institute the absolute milk diet. The quantity of milk ought to be sufficient; two

and one-half liters to three liters a day. There is no necessity for insisting upon the way in which the milk shall be taken. The patient will have to take the milk in small quantities at a time. If disgust supervenes, it may be sweetened or salted according to the taste of the woman. Finally, in certain cases, it will be well to use milk sterilized according to the process recommended by our instructor, M. Budin. The alkalines will be good adjuvants of the lactated regime, and, what is of more practical importance, is to cut the milk with Vichy water. The regime will have to be continued as long as the urine contains any albumin and care must be taken also to collect all the urine passed by the patient.

In this way the quantity of albumin discharged can be estimated. It will be well not to leave off the milk suddenly, and, when the urine shall have become normal, the patient will be allowed to eat, whilst giving her milk as a drink. Finally, upon the slightest trace of albumin the milk regime will have to be instituted anew.

There are other important points to be noticed in the treatment of eclampsia. It is known that the intestine is one of the principal foci of the poison, and therefore the intestinal functions should be attentively watched. Injections generally suffice; but we may have recourse to laxatives, and especially to rhubarb, which, given in the evening in the dose of a gramme, produces the following morning sufficiently free evacuations. Intestinal antisepsis can also be accomplished by ordering naphthol or benzoate of soda.

Finally, there is one point that should not be neglected, that is, to watch over the hygiene of the woman. It is necessary that every pregnant woman, and particularly if she is albuminuric, should take frequent baths. We can not insist too much upon this point, and the more so because many women imagine that baths are injurious in pregnancy.

Exercise will also play an important part, and M. Budin insists very much upon this fact. This exercise should be moderate, and walking in the open air is certainly one of the best. The importance of this exercise explains why eclampsia is more frequent among women coming out from the asylums for pregnant women than among the women of the public, who work up to the last moment. Under the influence of muscular contractions, the circulation is better performed, the respiration is more profound, and the materials of waste are more readily destroyed.

It is with the same purpose in view that M. Jacoud has his albuminuric patients inhale oxygen.

MEDICAL TREATMENT.—We shall not describe all the methods of treatment, which are too numerous, we shall only speak of the principal ones. Amongst the latter must be mentioned the anesthetic medication, which has many advocates.

Chloroform, Ether.—This latter agent was employed at one time by Channing, but it has been dethroned by chloroform. The first use of chloroform in eclampsia was made by Richet in 1848. Employed by Bouchacourt, Gros, Blot, Tarnier, etc., successively, it has become one of the most usually employed remedies for combating this affection. Its chief advantages are that it diminishes the number of paroxysms whilst weakening the sensori-motor force of the cord and of the bulb. It is well known that repeated convulsions are dangerous for the mother and for the infant. But apart from these advantages, chloroform presents some disadvantages and therefore the adversaries of this method have been numerous, and among these Depaul has been the most determined. In fact, chloroform causes congestion of the nerve centers; besides it is toxic, and one asks if it is not dangerous to add still another toxic element to the different poisons that the economy ought to eliminate. Finally chloroform has been accused of producing renal lesions, even in the healthy subject (Rindskopf, Dürhsen). There are two modes of administering chloroform: It may be given in a continuous manner or on the contrary it may be used only at the moment of the paroxysm. In the former case it is necessary to keep the woman in a profound sleep during the whole time that her eclampsia lasts; the quantity of chloroform absorbed is also considerable (four to five hundred grammes in twenty-four hours). We believe that this method is dangerous, and that under the pretext of suppressing the paroxysms, the patients are profoundly poisoned. The second mode of administering it is more rational and is that which is employed in the service of M. Budin. The patient is carefully watched, and as soon as the fibrillary movements of the facial muscles give rise to the apprehension that the patient is going to have a paroxysm, chloroform is immediately administered. Under the influence of this anesthetic agent it is often possible to abort the attack. It is then left off, to be resumed as soon as a paroxysm is threatened.

This method is excellent and has but one inconvenience: that is that the patient must be attentively watched, in order to surprise the paroxysm at its very beginning.

Hydrate of Chloral.—This remedy is the one that has the most advocates. Employed for the first time by Bouchut in eclampsia, its use became rapidly disseminated. It is in effect, less poisonous than chloroform, and its use is entirely practical. It may be administered either by the mouth or by the rectum, for the sub-cutaneous or intro-venous injections have been entirely abandoned. If the patients have no attacks of vomiting, and if they preserve their consciousness between the paroxysms it may be given in the form of syrup of chloral. If, on the contrary, it is impossible to give it by the mouth, it will have to be em-

ployed in the form of an injection. One will commence by cleansing the intestine with a simple enema, then the following mixture will be prepared:

Milk	120 grammes.
Yolk of egg	No. 1.
Hydrate of chloral	3 grammes.

which must be introduced into the rectum by aid of a small syringe. The milk and the yellow of egg are indispensable for without that the chloral irritates the rectum and the enema may be discharged. The dose to be given varies according to authors; it oscillates between 4 grammes and 20 grammes in twenty-four hours.

We believe that it is unnecessary to exaggerate the dose, and that, in certain average cases, 6 to 8 grammes suffice to keep the woman in a state of profound sleep.

Morphine.—This medicine is but seldom employed in France, for its injurious effects upon the heart are feared. Besides, opium has the disadvantage of causing congestion of the lungs.

In America and in Germany, on the contrary, it is currently employed. The doses injected ought to be pretty large. It is necessary to give from six to ten centigrammes in order to obtain any result.

Extraction of Blood.—Almost abandoned by all physicians, bleeding seems about to again become fashionable, since we now know that the serum of eclamptic subjects is toxic. In effect, bleeding acts by freeing the blood of a part of the poisons that it contains. According to Bouchard, by taking away thirty-two grammes of blood from an eclamptic one suppresses six centigrammes of extractive matters, which is perhaps a quantity equal to 280 grammes of diarrhetic fluid, and 100 liters of sweat. We see, then that by withdrawing 500 grammes of blood the organism is delivered from a notable proportion of poison. The other advantages of bleeding are lowering the venous pressure and preventing the asphyxia produced by the pulmonary oedema.

In spite of these good effects, many physicians distrust it; it is objected, in effect, that it weakens the patient and that it diminishes the urinary secretion by lowering the blood pressure. We believe, in spite of all this, that venosection is an excellent therapeutic remedy in eclampsia, and especially when it is accompanied by elevation of temperature.

Diaphoretic Method.—We will not speak of injections of pilocarpine, which are subject to the inconvenience of producing a free salivation that may asphyxiate the patient during the period of coma. We shall only speak a word about warm baths, which have been extolled by the Vienna school, and particularly by Breus. The patient is placed in a bath of thirty-eight degrees, then the temperature is gradually raised up to forty-two or forty-four degrees. The duration of the bath is about half

an hour, then, on coming out from the bath, the patient is enveloped in hot wrappings and coverings. These baths are renewed two or three times a day.

Injections of Artificial Serum.—Injections of salt water into the cellular tissue have been employed for a long time, especially in cases of cholera. MM. Porats and Bernheim have applied this therapeutical measure to puerperal eclampsia. These injections have the advantage of elevating the blood pressure and, consequently, of increasing the urinary secretion. Finally they dilute the toxic products that are contained in the blood. These injections should be made in the sub-cutaneous cellular tissue, in the region of the buttocks. The fluid should be composed of a solution of chloride of sodium of the strength of 7 grammes to a 1,000. One can inject from 500 grammes to a liter at a time. This mode of treatment has given good results in the service of M. Porak at Lariboisiere.

Some authors add bleeding to the injections of serum. Thus a certain amount of poisonous serum is withdrawn, which is replaced by an absolutely harmless fluid. But if we dilute the poison, we likewise dilute the blood globules, which necessarily produces great inconveniences from the point of view of hematosis.

General Management.—Before passing to the obstetrical treatment, we shall speak a word about the general attentions that should be given to eclamptics. As soon as a woman has had her first attack of eclampsia she should have some one with her, and it is necessary to have a person who will not leave her. The patient ought to be placed in a horizontal position, and as far as possible isolated in a chamber in which silence will be complete. As soon as the attack commences, care must be taken to push back the tongue in order to avoid the bites, which are frequent at the moment of the clonic convulsions. The simplest way is to introduce a compress into the mouth and to use it like a girth, to prevent the tongue from falling between the teeth.

We may likewise make use of a wooden spoon, which is introduced between the dental arches. * It is seldom that one is obliged to support the patients, for they have no tendency to fall out of bed. Examinations should not be frequent, and yet it is necessary carefully to watch the labor, for it is not rare that patients are confined during coma, and in this instance a physician is not warned by the efforts at expulsion. One ought to, besides, have milk given to the woman to drink, and to profit by the intervals between the paroxysms to cause her to take a sufficient quantity. We can also introduce a tube of Faucher into the stomach, as M. Tarnier has advised.

Let us say in closing that the bladder will have to be emptied by the catheter, and that antiseptic precautions must not be neglected, for eclamptics are easily infected.

Obstetrical Treatment.—We are about to enter into the most delicate part of the treatment of eclampsia. It is, in fact, one of the most disputed points in obstetrics. Ought we to let the woman be delivered spontaneously? Ought we to provoke the labor? Finally, ought we to perform forced accouchment? All these methods have their advocates. We are going to rapidly indicate the different views of authors on this subject.

First. The labor is not declared. Eclampsia being observed above all in pregnant women, it is not astonishing that accoucheurs conceived the idea of provoking labor in order to suppress the convulsive attacks. It is not rare, in fact, to see the paroxysms disappear after confinement. Finally, in certain cases, the death of the child in the uterine cavity has caused the cessation of the symptoms. All these reasons have influenced some accoucheurs to free the uterine cavity as quickly as possible of its contents. Among these, must be mentioned Kiwisch, Litzmann, Simon, Bräun, Legroux, etc.

We can make use, either of the bougie of Krause, or of inflated dilators. Against this mode of proceeding some have not failed to advance numerous objections. If in certain cases the attacks diminish after the labor, there are others in which the evacuation of the uterus does not appear to modify the progress of the eclampsia; besides, everybody knows that this affection may be met with during the period of the lochia. But the principal objection is that the labor is almost always declared spontaneously under the influence of the attacks of eclampsia. But it is always dangerous to proceed to manoeuvres that provoke the appearance of paroxysms, since the labor is declared almost always spontaneously.

Second. The labor is declared. A great many accoucheurs (Dubois, Pajot, Charpentier, Tarnier, Budin) in this event, allow the labor to proceed spontaneously and the more frequently, dilatation takes place rapidly. When the dilatation shall be sufficient to allow the foetus to pass, the labor ought to be terminated rapidly by the application of forceps or by version, according to circumstances.

Other authors are disposed to intervene in order to hasten the labor, some employing means of a gentle nature, and, among the latter, may be mentioned the dilator of M. Tarnier, and especially manual dilatation.

In point of fact, by this means we succeed quite rapidly in dilating the uterine neck, especially in multipara. Haultain employed this method in three cases of grave eclampsia, and had three successes for the mothers.

Other accoucheurs are of the opinion that the labor should be terminated as quickly as possible, and at any cost. The principal

defender of forced delivery in cases of eclampsia is Dürhssen. This author does not hesitate to practice incisions upon the cervix, going as far as the vaginal culs-de-sac. The method is very dangerous because of the serious hemorrhages it gives rise to in its train, and the lacerations of the body of the uterus which may be produced at the moment of the passage of the foetus.

Let us say a word, in closing, of the cesarian operation, which has been proposed by Halbertsma, Muller, Poll, etc.; we think that in France very few accoucheurs are of their opinion.

This operation should only be done *post mortem*, when the child remains living in the uterus of the mother.

In conclusion we think that it is wiser not to provoke the confinement in eclampsia, since in the majority of cases the labor is declared spontaneously. When the dilatation shall be sufficient you will immediately free the uterus of its contents. Forced delivery should be reserved for the extraction of a viable infant in danger of death if the mother is dying. As to the cesarian operation, it should not be performed except *post mortem*.

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SELECTIONS.

THE CRAIG COLONY FOR EPILEPTICS.

By FREDERICK PETERSON, M.D.

Attending Neurologist to the City Hospital, Blackwell's Island; Chief of Clinic, Nervous Department, Vanderbilt Clinic, College of Physicians and Surgeons, New York; President of the Board of Managers of Craig Colony.

A knowledge of the peculiar needs of epileptics, gained by me during several years' experience in one of our large asylums for the insane, and a subsequent visit to the great colony for epileptics in Germany (Bielefeld), which I described in the *New York Medical Record* in the spring of 1887, led me to seek to establish in this country a colony of this kind which should rival, if not surpass, its foreign prototype. To this end legislation was begun and carried on successfully until 1892, when the New York Legislature passed a bill empowering the Governor to appoint a Commission to select a site in New York State for a colony for epileptics; further legislation was required for its purchase and preparation for its benevolent purpose. It is now open, and the first patients have been received there.

THE SITUATION OF CRAIG COLONY.—Craig Colony, named for the late Oscar Craig of Rochester, formerly President of the State Board of

Charities, consists of nearly 1,900 acres of land in the Genesee Valley. It is reached by two trunk lines of railways (the Erie and the Delaware & Lackawanna), and from roads centering at Rochester by the Western New York and Pennsylvania Railroad. The colony has its own post-office and railway station, known as Sonyea, an Indian word, signifying sunny place. The land is extremely fertile and beautifully diversified with fields, woodlands, meadows and glens. The farms, gardens and orchards are already in a high state of cultivation, and will yield this year an income of \$12,000 to \$15,000. It had already been a colony for fifty years, having belonged to a body of Shakers, who had built thirty to forty substantial buildings upon the tract for residences, shops and the like. The Shakers, having dwindled in numbers, disposed of the property to the State at less than half of its value; many of the buildings have been put into perfect order for their new purposes, and systems of electric lighting, water supply, sewerage and heating introduced. The illustrations presented show some of the buildings which are now in use.

THE PLAN OF THE COLONY.—The law establishing the colony required that it should be arranged on the village plan. To this end the services of Frederick Law Olmsted, the landscape architect, were secured by the Board of Managers, and he has prepared the scheme of an industrial and agricultural village upon the best principles. There are already many buildings upon the grounds (some thirty or forty), which are to be immediately utilized. Craig Colony will not resemble an institution in any particular, but will look more like a country town than anything else. As the patients are received, they will be set to work or at study in various ways. They will take care of the farms, gardens, and orchards; they will plan and build new houses. There will be among them tailors, shoemakers, printers, bookbinders, masons, iron-workers, carpenters, painters, and so on. In fact, every sort of employment, every sort of recreation, everything in short that goes to make up the life of a country village will be found in this colony, the only difference being that the citizens of this community will be epileptics.

NEED FOR PROVISION OF THIS KIND.—Epilepsy is a peculiar disease, characterized by loss of consciousness and a convulsion. The fit or epileptic seizure occurs from time to time, and may last from a few seconds to a few minutes, sometimes longer. Some patients have fits every day or oftener, some once a week, some once a month, some only once or twice a year. It is only during the fits that they are incapacitated. At other times they are well and strong and healthy looking, and quite as able to work and study as are other people. But the fact that they have these fits, no matter how rarely, debars them from many of the privileges enjoyed by their more for-

tunate brethren. They will not, on that account, be received into the public schools and can receive no education. They cannot attend church or social gatherings. They are shunned by their playmates, and they become burdensome to their families. When they grow to adult life no one wishes to employ them, so, although they are able to learn a trade or profession, the shops and colleges are closed against them. No general hospital receives them as patients, and, in fact, there is no place at all which is open to them except an almshouse or an insane asylum, and as the insane asylum is better than the almshouse, many patients are sent there in preference to a poorhouse.

According to the latest statistics there are now in the State of New York over 800 epileptics ready to enter the colony as soon as they can be accommodated.

THE OBJECTS OF THE COLONY.—In accordance with what has already been stated, we may summarize the purposes of such provision for epileptics as follows:

First.—To give them schools where they may be educated as other children and young people are.

Second.—To afford them industrial training in any sort of occupation they may desire to follow.

Third.—To provide those epileptics a home to whom all other doors are closed.

Fourth.—To treat every case of epilepsy according to the best known scientific methods.

THE ECONOMY OF THE SCHEME.—The resources of the land are such that almost everything in the way of food for the inhabitants of this unique village can be raised by themselves, and their surplus agricultural and manufacturing products, judiciously managed, can make the colony practically self-supporting. Thus the large number of patients already upon public support in this State are to be no longer a burden to the taxpayers.

RESTRICTIONS AS TO THE KIND OF CASES RECEIVED.—There will be no restriction as to the age of patients admitted, and the only restriction practically applies to the mental condition. Insane epileptics, or epileptics subject to insane outbreaks, cannot be taken into the colony.

STATE PATIENTS.—The patients taken from the almshouses and asylums will be known as State patients, and they will be provided for before any private patients can be received. They will be sent to the colony by the poor authorities of each county according to a form required by law, the blanks for which will be furnished on application to the State Board of Charities or the superintendent of the colony.

PRIVATE PATIENTS.—As soon as all epileptics now upon public charge eligible for admission to the colony are provided for, private pa-

tients will be received at prices regulated by the Board of Managers, according to the kind and extent of care and attention required. Such patients may, if it be desired, erect cottages for their own use upon the grounds, upon application to the Board of Managers.

THE STUDY OF EPILEPSY.—Not the least important among the purposes of the Board of Managers is the idea of making the colony the seat of clinico-pathological investigations of a high order. To this end a pathologist is to be appointed whose sole object it will be to discover, if possible, the causes of this widely prevalent and almost irremediable disease, in order that one day a cure may be found for the majority of patients affected with epilepsy, in the place of the less than six per cent. of cases that nowadays yield to treatment.

DONATIONS TO THE COLONY.—The law permits the Board of Managers to take and hold in trust for the State any grant of land, gift or bequest of money, or any donation to be applied, principal or income, or both, to the maintenance and education of epileptics and the general uses of the colony. Charitably disposed people have here an opportunity for the beneficent use of money, and it is to be hoped that memorial buildings in the way of chapel, library, museum, gymnasium, school, shop, or cottages, bearing the donors names may in time be erected.

OFFICERS OF CRAIG COLONY.—The State Board of Charities has jurisdiction over this colony. The Board of Managers consists of Dr. Frederick Peterson, president, 60 West Fiftieth street, New York; Mrs. Charles F. Wadsworth, Geneseo, N. Y.; H. E. Brown, Mount Morris, N. Y., secretary; W. H. Cuddeback, Buffalo, N. Y.; Charles E. Jones, M. D., Albany, N. Y.; L. S. Oatman, Buffalo, N. Y.; Judge O. P. Hurd, Watkins, N. Y.; Jeanette B. Hawkins, Malone, N. Y., and Mrs. Salmon, Syracuse, N. Y. The medical superintendent is Dr. William P. Spratling; assistant physician, Dr. L. Pierce Clark; and matron, Miss Elizabeth Holt, a graduate of the New York Hospital Training School for Nurses.

The superintendent may be addressed at Craig Colony, Sonyea, N. Y.

THE DANGERS OF CYCLING.

Cycling which was yesterday the fad of the few is to-day the pastime of the many; it has brought wealth to the wayside town and village, has given a new industry to the country, and by taking the place of more expensive forms of locomotion has facilitated in various ways the carrying on of trade. But unfortunately this progress, which has taken place well within a quarter of a century, has been attended with the sacrifice of many lives and with numberless casualties, many of which have been very severe. With the advent of the motor cycle it

is more than probable that the number of casualties from cycling will increase, in which case legislation will be called for. We should, however, be sorry to see so popular a pastime as cycling trammelled by legislative rules and hope that the good sense of cyclists will prevent anything of the kind, the dangers are pointed out and the remedies which they can themselves apply are suggested.

It is a noteworthy fact that in nearly every case where an accident has occurred, the cyclist has been riding for pleasure, and it is still further noteworthy that by far the larger percentage of accidents are attributable to recklessness or want of knowledge and skill in manipulating the machine. A prolific source of accident and one which seems to present an ever-recurring source of temptation to many cyclists to see how speedily they can sacrifice their lives is hilly ground. The moment the brow of a hill is reached the reckless cyclist seems impelled to take his feet from the pedals and to allow the machine to descend with all the rapidity which weight, gravity, and the gathering force give it. To the novice this is especially attractive, inasmuch as it gives him an opportunity of resting his tired muscles. Providing the rider has a straight and clear road it is just possible that no accident may occur, but the story of casualties from this cause is invariably the same; the cyclist loses control over his machine and collides with some object, be it cart, hedge, or wall, with the resulting effect of death or severe injury. A good brake affixed to the back wheel of the machine would have the effect of considerably reducing the number of accidents from this cause, but, unfortunately, there is an idea that the addition of a brake adds an inconvenient weight to the machine. It is true that there is still room for improvement in the matter of brakes, but there is a pneumatic contrivance on the market which is both safe and effective, it being attached to the back wheel and being very light the excuse of inconvenient weight cannot be urged. Another frequent cause of accident is the practice of "scorching." For the benefit of the uninitiated we may define the term as an impulse overruling the cyclist's reason compelling him to overtake any and every moving object which may be in front of him. It is somewhat analogous to the schoolboy's love of overtaking those walking before him, and it shows similar lack of mental control. Oblivious of everything but the one object of overtaking that which is immediately in front of him, he rushes madly on and, if fortunate enough to escape injury to himself, is only too likely to cause serious harm, if not death, to the pedestrian who may be unfortunate enough to be in his way. The ambition for record breaking and the desire for making a "century run"—i. e., the covering of a hundred miles in one day—are greatly responsible for the practice of "scorching" and they should be strongly denounced by any medical man who has

an opportunity of advising in the matter. These two causes of accident, which we are sorry to say cannot be attributed to the male sex alone, occur for the most part outside large towns, where reckless riding can be indulged in with some amount of impunity as far as the law is concerned. When we come to consider the accidents which occur in the busy towns we have to chronicle carelessness, incompetence, and a lamentable want of knowledge as to the rules of the road. Quite a number of these accidents occur to women, many of whom are physically unfit to cope with the crowded traffic. Wedged in between a number of vehicles, and lacking the necessary nerve to extricate themselves, they waver, and either run into a horse and cause it to plunge or themselves fall beneath the wheels of a vehicle. The accidents which occur to the male sex may sometimes be attributable to the same cause, but more frequently they are the result of a reckless disregard of danger and a desire to pass by the vehicle in front. This causes the horse to shy and perhaps to upset the cyclist. Riding too close behind a vehicle is another cause of accident. The cart, or whatever it may be, suddenly pulls up, the cyclist rushes into it, and is thrown, and another vehicle passes over him. Want of knowledge or wilful disregard of the rules of the road, too, has been the cause of several deaths and severe injuries. It is not, however, always the fault of the cyclist that accidents happen in our crowded thoroughfares. The intolerance of cabmen the reckless driving of butchers' traps and milk carts and light vans carrying provisions are too well known to need comment. Cabmen, too, often delight in causing as much inconvenience and annoyance to happen in our crowded thoroughfares. The intolerance of cabmen, deliberately crossing to the wrong side of the road in front of a cyclist for no other purpose than the wanton one of causing the latter to dismount. Drivers of light private vehicles again frequently show the utmost contempt for the cyclist, whom they seem to think has no right whatever to the use of the road. This feeling on the part of drivers often shows itself against pedestrians, and it cannot be too frequently pointed out that the road is not the exclusive property of the drivers of horses and carts. Faulty machines are a source of accident which manufacturers should be made responsible for. Several accidents have occurred lately from this cause, and we greatly fear that the increasing demand on the part of the public for machines will not tend to lessen this cause unless manufacturers are made liable. Two serious sources of danger are the use of the crowded roads by learners and the hiring out of machines to novices. A busy road would seem to be the last place a sensible person would select for learning to ride a bicycle, yet three deaths have taken place from this cause within the past few weeks. The hiring out of bicycles to children and roughs, bent on what they call a "spree," should be checked by law.

It should be quite possible to license those who let out cycles for hire, and such persons should be made responsible if an accident occurs through the letting out of a machine to an incompetent person.

The cases which we have mentioned are not hypothetical, but have been drawn from a list of recent accidents, and we have instanced them with the object of showing that the accidents connected with cycling are, for the most part, preventable. Our contemporaries who are devoted to the interests of "wheeling" have, we know, already done good service in this respect, but we venture to assert that if they would impress even more strenuously upon the cycling public the importance of strictly attending to some such simple rules as the following, much good would ensue. These rules are not intended to be exhaustive, nor are they for the expert cyclist, although even the experienced rider should not ignore them.

Thoroughly examine your machine before starting on a journey.

Do not ride without a brake, which should be attached to the back wheel if possible.

Beware of tram lines, especially when they are wet.

Avoid turning sharply on a wet or "greasy" road.

Pass horses at a slow speed.

Never take the feet off the pedals when riding down hills.

Do not ride with the hands off the handles, especially in crowded thoroughfares.

Ride carefully when passing side streets or the carriage entrance to houses.

Before attempting to pass another vehicle ring the bell when at least twenty yards distant. This will give the rider time to see what the intentions of the driver of the vehicle in front are, and will enable the cyclist to take precautionary measures in time, should such be necessary.

When riding in parties vehicles should be passed in single file.

Warning by the bell should be given in as gentle a manner as possible. The sudden ringing of a loud gong is apt to cause a pedestrian to lose his presence of mind, and run into the very danger it was the intention of the cyclist he should avoid.

When riding behind vehicles in a crowded thoroughfare be prepared to dismount at a moment's notice if necessary.

Keep on the proper side of the road.¹

Ladies should not attempt to ride in the public thoroughfares until they have absolute control over and confidence in their machine. They should keep as near as possible to the curb and ride slowly.

Those who wear a skirt should see that it is not too long. It should

¹This rule must be applied with intelligence. There are cases when a deviation from the strict rule will prevent an accident.

be lined in front with some glazed material in order to prevent friction, and all loose drapery which is likely to be caught by the wind and perhaps caught in the machine should be avoided.

In addition, we would suggest that persons who let out cycles for hire should be under the control of the police. It should be a punishable offence to let out machines not in proper order, and no child or other incompetent person should be allowed to hire a machine.

It should be possible for the police to prevent novices learning to ride in the public thoroughfares.

Railway companies should issue cheap tickets for cyclists and their machines, in order that riders might be enabled to commence their journey as far as possible away from crowded thoroughfares.—The Lancet.

A NEW FORM OF ANTISEPTIC TREATMENT OF WOUNDS.

By DR. C. L. SCHLEICH, Berlin.

If gelatine dissolved in water is exposed to Formalin vapours, a chemical compound possessing completely novel properties is formed. The gelatine completely loses its gelatinous character, and becomes an extremely indifferent and resistant hard transparent body. Neither dry nor moist heat can dissolve it, neither organic nor mineral acids, alkalies or alkali, or acid salts, affect it. When heated the mass becomes slightly extensible, but regains its stiff, elastic nature on cooling. The Formalin, which is not mixed with, but chemically combined in the compound, also becomes inactive, so that hyphomycetes have sometimes been observed on the surface of gelatine plates hardened with Formalin, and when broken into fine powder and mixed with bacteria, the compound exerts no kolyseptic influence.

It was the object of my investigation to ascertain whether it is possible for the Formalin gelatine to give up its Formalin in the organism and so to effect an antiseptis by means of the tissues elaborating their own antiseptic by means of the tissues elaborating their own antiseptic from this non-antiseptic and non-toxic substance.

As a trial the incorporation of Formalin-gelatine in the abdominal cavity of a rabbit was attempted. A piece of dry Formalin-gelatine about the size of an apple was inserted and sewn up with aseptic precautions. The rabbit lived and remained perfectly well the subsequent six and one-half weeks. When I then reopened the abdomen I found immediately under the old opening, in a coil of intestine, a radiating horny connective tissue about half the size of the piece of Formalin-gelatine inserted, but, to my great astonishment, no sign of the Formalin-gelatine itself. Section of the newly-formed connective tissue explained the situation at once. In the center of the neo-plastic tissue was a soft, whitish nucleus about the size of a hazel nut, which apparently constituted the

remainder of the absorbed material. This was most astounding, that the peritoneum, leucocytes and body juices should have dissolved in so brief a period a substance which exhibits such great resistance to solvents outside the body. Still more surprising was the fact that the implantation carried out without special precautions in the body of a rabbit, which is specially disposed to lymphomatous eruptions, developed no sign of cheesy degeneration around the smooth cicatrix.

This experiment I have naturally repeated, and also on pigeons and dogs, mixing in some cases even bacteria with the powdered Formalin-gelatine, after having determined absence of kolyseptic action in the powder. The powder was absorbed without reaction. Supported by this experience, I began to employ powdered Formalin-gelatine for the treatment of wounds, and found that it answered all expectations. The human sytem also decomposes Formalin-gelatine with continuous liberation of the antiseptic. Even contact of the tissues with this preparation is sufficient to cause liberation from the absorbed gelatine in statu nascendi, molecule by molecule, a slow continuous evolution of Formalin, which effects an extremely practical wound sterilization. Here an antiseptic is used continually, as it is formed, in the molecular condition. The application is a permanent one, and equally active in the wound at all times. Hence the difference in the principle of this method from all previous antiseptic measures. In the latter a temporary, and for a time, very energetic contact action of the antiseptic may take place, but in consequence of the formation of almost insoluble compounds between antiseptic and tissues subsequent action is prevented.

If the experimental proof of the constant action of Formalin-gelatine is doubted, the pre-eminent clinical utility of this material for healing wounds must be recognized. With the aid of this powder all acute purulent processes are overcome and a guarantee is afforded for the aseptic course of the wound without further measures. I have employed it without drawback in 120 cases of acute purulent processes, in 93 aseptic wounds, in 4 compound fractures, and in 2 deep scalp wounds.

At the same time I would mention that instead of the strict aseptic measures usually adopted, even in the most complicated wounds only mechanical purification was carried out, and the powder carefully dusted over all the wound, with the effect that in all cases the purulent processes were stayed within 24 hours, the compound fractures healed aseptic and without fever, and in all cases of aseptic operations the presence of the powder afforded a guarantee for uninterrupted healing.

In presence of fresh blood and in clean wounds the powder forms in a few hours an absolutely dry and very firm scab. In fresh purulent cases, if no necrosis of the tissues is present, the formation of pus ceases completely within 24 hours, and frequently pure serum instead of pus

flow from the wound. Such wounds always remain soft and unred-dened round the edges. Furuncles, carbuncles and phlegmona can be brought under control in 24 hours, so far as the powder comes into contact with healthy or inflamed tissues; at the same time it is characteristic that the blood in the bandage remains bright red, which proves the liberation of Formalin, which alone possesses this property of keeping the red blood corpuscles.

Production of pus, if no necrotic residues are present, is stayed at once, and the healing process shortened. If necrotic tissue is present, as in old ulcera cruris and in tuberculous and luetic infections, the Formalin-gelatine remains inactive, but develops its properties all the more in acute inflammation, and is a prophylactic to infection. Fresh wounds I no longer disinfect, but leave their healing to the activity of the tissues. The healing of wounds is so satisfactory that the most critical eye can detect no fault therein.

Experimental investigation of the new vulnerary by my friend, A. Gottstein, showed that hydrochloric acid pepsine solutions are in like manner able to decompose Formalin-gelatine outside of the organism. This discovery extended the application of Formalin-gelatine to the treatment of wounds where the automatic development of the antiseptic failed, namely where necrotic tissue and masses of dried secretion prevented the gelatine coming into contact with the healthy tissue.

In such old wounds the powder should be scattered over the wound as usual, and then moistened with

Pepsini	75 grains.
Acidi hydrochlorici	5 minims.
Aq. dest	4 ounces.

The ferment effects the decomposition of the molecule, and constant development of Formalin vapours, otherwise brought about by the healthy or inflamed tissues, but which the paralysed or necrobiotic-cells are unable to do.

To summarise briefly, we possess in powder form a remedy, which, in contact with clean wounds forms a firm scab, without other disinfectant measures, in the course of a few hours, so that primary stitched wounds are in the shortest possible time covered with a protective layer which prevents infection. The Formalin-gelatine is further able, by the molecular antiseptis set up by cellular activity, to destroy bacteria present in the tissues, and enables the cellular tissues to rapidly become masters of the situation. The Formalin-gelatine stops acute purulent processes with great certainty, if, after incision and application of the powder the production of tissue and liberation of Formalin vapours is allowed to go on undisturbed; in presence of much necrotic material the cell activity can be supplemented by digestion with pepsin-hydrochloric acid.

Formalin-gelatine, manufactured by the Chemische Fabrik auf Actien, vormals E. Schering, Berlin, Germany, is introduced to the medical profession under the name of "Glutol-Schleich."—*Therapeutische Monatshefte*, February, 1896.

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ABSTRACTS.

COMMON SORE THROATS.

In the *Lancet* for February 15 Dr. Clement Dukes, physician to the Rugby School, alludes to the importance of seeing invalids in the very earliest stage of their indisposition, as we are able then not only to learn the symptoms of the onset of the disease, but, a circumstance of still greater moment to the individual patient, to place him early under the most favorable conditions as regards himself, and to isolate him, if need be, for the protection of others. In his very early days of office at the school, he says, he recognized the importance of knowing the condition of the throat in the young, it being involved in so many illnesses; consequently the habit arose intuitively of looking at the throat of every boy who expressed himself as not feeling well, without waiting for any complaint from him concerning it. Whenever the least deviation from a healthy appearance was noticed, says the author, however trivial, strict isolation was enforced, and the patient was kept away from the healthy boys until he had quite recovered. In this way all ailments attended with sore throat, some of them of the greatest moment to the young, had been prevented from spreading. It is scarcely necessary to point out, he says, that it is the first cases that require attention and isolation if the diseases are to be limited in extent. On inspection of the throat in the young in the very earliest stage of its abnormality certain common conditions are discovered which gradually assume the various forms typical of recognized diseases, and these throats, says Dr. Dukes, are seen and the patients isolated often long before a diagnosis is possible. When a case can be diagnosticated at first sight, it is far too late for the welfare of the individual and for the protection of others.

With regard to inflammatory sore throats, he says, the first stage of all the common sore throats, which are termed amygdalitis, is that the membrane of the fauces generally appears smooth, dry, glistening, and as if all secretion and the superficial layer of the mucous membrane had been scraped off and the surface polished. Many throats, under treatment, proceed no further than this stage. In the next condition this superficial layer of the mucous membrane is swollen, which causes it to assume a

dusky-red velvet appearance, and this also may proceed no further. This is succeeded in a large proportion of cases by swelling of the tonsils, which gradually become covered with minute isolated white dots, which are occasioned by an excess of the normal secretion, owing to the inflammation, from the follicles of the tonsils. This secretion in certain cases—and these individuals usually have this kind of throat whenever they take cold—becomes so excessive as not only to appear at the orifices of the follicles, but to join one another until the surface of the tonsil becomes covered with a thick, soft, ashy-gray, dirty-looking membrane, but one which bears no more relation to diphtheria than chicken-pox does to small-pox. The same individual invariably has the same kind of inflammatory throat, and whenever he takes cold it is in the form of, or accompanied by, a sore throat. In the last phase of these cases of amygdalitis the inflammation and swelling—often after a prior subsidence, so as to seem almost a recrudescence—increase, extend and involve the soft palate, and a quinsy is formed. All these forms of amygdalitis, says the author, are infectious in the young, and they spread in the same way, but not to the same extent, as common colds.

Respecting septic sore throats, he says, which may arise from defective arrangements in the water supply, drainage, etc., he urges the necessity of flushing drains and emptying drinking water cisterns and filters before the reassembling of school after each vacation.

The sore throat of scarlet fever in its initial stage consists of a diffuse, dull, brick-red appearance of the mucous membrane of the fauces—in fact, it is a diffuse rash on the mucous membrane similar to that which occurs subsequently on the skin. It begins at, or at all events, is most visible on, the wings of the soft palate, extending to the tip of the uvula, but it involves the whole of the mucous membrane of the fauces. In a large proportion of cases it begins and ends in this, though in many it progresses to every phase of ulceration, which alone is sometimes difficult to assign to scarlet fever; but the character of the rash, together with the peeling tongue on the fourth day, leave little doubt as to the diagnosis. It is the slight sore throat, accompanied by merely a transient rash, which causes the main difficulty in diagnosis.

In the sore throat of diphtheria, at the onset, there is usually a dark redness and swelling of the tonsils and the fauces generally, with very marked odema of the uvula, which appearances are quite undistinguishable from acute amygdalitis. Hence, says Dr. Dukes, the necessity of at once isolating all patients with amygdalitis, as no one can possibly be sure what form of sore throat it will prove to be. Subsequently the whole or a part of the fauces becomes covered with a grayish secretion, sometimes assuming the character of a dense membrane like wet wash-leather, which arises in patches, and rarely in the small, white regular dots which

coalesce into a patch incidental to amygdalitis. These patches spread, and may become continuous, involving the whole of the fauces.

The sore throat of varicella is occasioned by spots on the mouth and pharynx similar to those on the skin, and they often greatly resemble the small ulcers common to stomatitis, from which they are distinguishable by the eruption on the skin.

The sore throat of epidemic roseola (Rotheln) resembles closely the early stage of the throat of scarlet fever, but it is accompanied by very early enlargement of the posterior cervical and other glands. There is no peeling of the tongue on the fourth day.—New York Medical Journal.

PILOCARPINE IN DISEASES OF THE LYMPH-GLANDS.

Waldstein (*Berliner klinische Wochenschrift*, No. 32, 1895), having demonstrated that subcutaneous injections of pilocarpine were followed by a distinct increase in the number of leucocytes, and that the drug exerted no local irritation, determined to try the remedy in lymphatic enlargements. The results were highly successful in the inflammatory enlargement of the lymph-glands accompanying scarlet fever and measles in children. One part of pilocarpine hydrochlorate was dissolved in 400 parts of water, and of this solution, sixteen minims (one twenty-fourth of a grain) constituted a dose. This amount, the author claims, can be given daily for a week or ten days to children three years old, and seldom causes salivation or sweating. In some cases the daily amount for children of three years or under may be increased to one-twelfth of a grain. In a case of multiple lymphona, and in a case of lupus of the hand the remedy gave good results. In the latter, however, it was impossible to predict a positive cure.

Pilocarpine in daily doses of one-fiftieth to one-twelfth of a grain was also used in seven cases of streptococcus angina in children ranging from three to eighteen years. All recovered, and in only one case did the drug cause sweating and salivation.

THE TREATMENT OF PERNICIOUS ANEMIA.

Dr. Joseph Collins, in *Medical News*, says: "Whether pernicious anemia is a special disease or one secondary to a number of exhausting conditions cannot be stated with positiveness. Advocates of the one contention may urge their claims quite logically as those of the other. Although we have been quite familiar with the histological condition of the blood, as well as with the pathological changes which go on in the hematopoietic organs, in this disease, yet no great advance has been made in the treatment of it until the publication of Professor Frazer's paper on the efficacy of bone-marrow, now nearly two years ago. In text-books, the disease is usually stated to be a fatal one, and little hope from treatment is

encouraged. The special remedial agents which are spoken of are arsenic, phosphorus and transfusion. It is also not uncommon to find it specifically stated that iron is of no value in this disease; the fact is demonstrated that it often does harm.

The drug which has been given with most confidence in the treatment of pernicious anemia, since it was first recommended by Isnord in 1865, and particularly since its claims were urged by Bramwell, several years later, is arsenic. The *rationale* of its use has never been satisfactorily explained from a physiological standpoint. Its efficaciousness in some cases is attested by trustworthy clinicians. It undoubtedly causes an increase in the number of red blood corpuscles—in all likelihood by stimulating the activity of the bone-marrow. But how it causes the increase in the constituents of the red blood corpuscles—that is, in what manner the amount of hemoglobin is added to, unless it be from the foodstuffs—it is impossible to say. As a matter of fact, arsenic often provokes a temporary improvement in the patient which is coincident with this increased output of red blood corpuscles, but which, if not followed by the administration of iron or substances rich in iron, is quickly followed by relapse that is generally fatal. There is probably no valid reason why iron in absorbable and non-irritating form should not be of corresponding value in this disease, as in other forms of anemia, providing the ability to take it into the system, and dispose of it after it is so taken, exists.

Necessarily the extreme impoverishment of the blood in pernicious anemia prevents a proper secretion of the digestive juices, and rapid hemolysis results in products which stimulate thermogenesis, the result being frequently a considerable degree of fever. These two factors alone are inimical to the absorption and disposal of iron. If, however, iron can be introduced into the blood in very small quantities, and in a form that does not irritate the digestive passages, there are very good reasons to believe that it is of no less service here than in other forms of anemia. It seems necessary to emphasize the statement that it does not deserve the stigma of inutility which text-books and tradition have given to it. It is because most of the cases of this disease succumb, no matter what treatment is used, that the conviction is so widespread.

The results of transfusion, though good results have followed careful use of this form of therapy by many trustworthy observers, have never appeared very brilliant nor convincing in the published reports. Here also the *rationale* of the procedure has never been clear. One advocate will remind us that it supplies the corpuscular element, while another that it contributes necessary serum, while a third may emphasize the fact that it carries into the blood a desirable amount of hemoglobin. To each of these there may be brought very serious objections. In the first place, it is the unanimous opinion of physiologists that foreign corpuscles, when

introduced, it matters not how carefully, soon die and add nothing to the blood but detritus. If its benefit depends upon the serum, which is almost incredible, there is always some risk of sepsis and other complications which go far to invalidate the small amount of efficacy which this measure contributes to the treatment of the disease.

The use of phosphorus has been almost entirely given up, and very properly so.

When Frazer reported a case of pernicious anemia in which the administration of bone-marrow was causative of such good results that complete cure rapidly followed—a case in which the usual modes of treatment had been most assiduously tried, with failure—it was hoped that this disease had at last yielded to therapy. And although experience during the last two years has not served to substantiate entirely this laudable hope, one does not feel in the presence of a patient suffering from this disease to-day such complete helplessness as he did before the agent was discovered. So many clinicians, like Danforth, Drummond, Barrs, Bigger, Pepper, and Stengel, have seen such startlingly beneficial results in cases which have been apparently quite hopeless, that we can no longer withstand the feeling that this form of therapy is the most potent in the treatment of pernicious anemia. The *rationale* of its use is quite as obscure as that of those which we have previously mentioned. It is the marrow of ox and calf bones that has been used most frequently in those cases where cure has followed. In the chemical examinations that had been made of the marrow and reported, it has been found that in several cases the yellow marrow was quite as beneficial as the red bone-marrow. It is well known that the former is not like the latter a hemopoietic tissue, and the amount of iron which it contains is really almost infinitesimal—as estimated by Stockman 1-56 of a grain or less to an ounce of the marrow—while red marrow contains something more than twice that quantity, still a very small amount. Nevertheless, if the clinical tests show encouraging results, as they have done frequently in the treatment of these cases, we should have the willingness to continue the treatment until physiological explanations shall follow. That this will be the outcome after a sufficient number of cases have been treated, there can scarcely be any doubt. The conflicting reports that have been made as to the efficacy of bone-marrow may be due, as has been suggested by Pepper and Stengel, to the preparation of the substance which has been used.

In the beginning the raw, unprepared marrow of ox bone was generally the form in which it was administered. Latterly a number of preparations, glycerin extract and other combinations, to palliate the patient's palate and esthesia have been tried, and it is particularly with these combinations that failure has been reported. It would seem justifiable,

after what has been done with the simple bone-marrow, to urge the necessity of making further experiments with this substance, not only in pernicious anemia, but in other forms of anemia, such as chlorosis. Indeed, in the latter disease excellent results have been reported by Billings, while at the same time he mentions two cases of pernicious anemia in which bone-marrow entirely failed. Mann has likewise seen good results follow the use of bone-marrow in hemophilia, and in symptomatic anemia, and the writer has in more than one case seen surprisingly beneficial results follow its use in the latter condition. In the profound anemia attending such conditions as anchilostomiasis, in which the parasites produce a substance which causes rapid destruction of the blood and albuminous tissue, it would seem that bone-marrow should be of signal service in promoting hemogenesis—for we do not believe that it has any influence to check hemolysis—while active measures are being taken to eject the parasites from their unnatural habitation. In fact, in a case of this disease, recently under observation, it would seem that bone-marrow has contributed very materially in just this way.

If pernicious anemia is a specific form of gastro-intestinal disease, a view which has for its most recent and ardent advocate Hunter (*British Medical Journal*, February 8, 1896), and entirely different to anemia due to the loss of blood and exhausting conditions, for instance, no valid objection can be advanced to the use of bone-marrow in the same way as in the last-mentioned case.

The experiments of Hunter show that there are characteristic changes in the liver, spleen, and kidneys, particularly in the peripheral areas of the liver lobules, which are not produced by the absorption of extravasated blood, but are in direct relationship with the gastro-intestinal tract, wherein the hemolysis begins, which is responsible for the pigment. These experiments have been done in such a scientific manner, and the conclusions have been stated in such a logical way that they carry conviction. They do not, however, suggest a way in which treatment may be more efficacious; for though they may prompt the suggestion that the gastro-intestinal disease is due to some organism, we know practically that treatment of pernicious anemia directed to that end is useless, or nearly so.

PROCEEDINGS OF SOCIETIES.

RICHMOND ACADEMY OF MEDICINE AND SURGERY.

MARK W. PEYSER, M. D., Secretary and Reporter.

Regular Meeting July 14, 1896, Dr. Landon B. Edwards, president, in the chair.

Dr. Wm. S. Gordon read a paper on "The Treatment of Typhoid Fever," with a report of cases. (See page 507.)

DISCUSSION.

Dr. J. W. Long asked the temperature of the baths used, and if they were the only antipyretics employed.

Dr. Gordon.—The temperature was a little below normal, and gradually reduced. He endeavored to reduce temperature by nature's method, through the skin. He certainly would not use the Woodbridge method in atypical cases, especially where constipation is marked.

Dr. Jacob Michaux wished to give some personal experience. He desires to call attention to the great good obtained from the use of strychnine. Benefit is derived through two channels: the effect upon the heart, the effect upon the nervous system, both being "toned."

One of the most important duties falling upon the doctor in typhoid fever is the maintenance of the integrity of the stomach: Take care of the stomach, and the patient can better bear disease, especially if the siege be a long one.

Another observation is, we are often too nervous about the diarrhea. It is eliminative, and unless the number of actions is sufficient to weaken the patient—say over six or seven a day—it is better to let it alone.

The subject of antipyretics in typhoid is an important one. He is afraid of coal-tar preparations, as they are too depressing. The administration of water is of vast importance—allow it freely for drinking purposes, as it aids the emunctories. When used externally, no antipyretic can compare with it, it reducing fever decidedly and safely.

He prefers the use of whiskey to brandy—being cheaper, and obtainable in a purer state. It should, however, be used, cautiously, but persistently.

Dr. G. B. Johnston said Dr. Gordon's paper suggested some points upon which he wished to speak. He has no belief in the existence of typho-malarial fever. The reports of so-called typho-malarial fever are cases of atypical typhoid. It has been his experience that we see very few typical cases in this region, the majority being the so-called typho-malaria, in which quinine produces little or no effect except to aggravate

the insomnia of the early stage, increase nervousness, and but seldom appreciably reduce temperature. If the last is effected, the advantage is dearly bought.

Now, he never administers quinine beyond the point of testing the fever, and if no response is early elicited, he abandons it.

Regarding the coal-tar preparations, he agrees with Drs. Gordon and Michaux. No harm—on the contrary, much good can be obtained from the use of small doses of phenacetine in the early stage, for cephalalgia and the general aching. He would not continue its employment later, when the circulation is depressed. For the relief of epistaxis, a ten per cent. solution of antipyrine, sprayed in the nostrils, is efficacious.

Regarding turpentine, it is an old friend, and physicians are too apt to overlook it. Dr. Gordon is right in valuing it, being especially useful in the later stages.

Comparing bleeding, the old depletive treatment—large doses of calomel and copious bleeding, and second, the expectant plan, with the modern method, the essence of the latter-day success may be summed up as, 1, absolute rest in the recumbent posture. Nothing is more dangerous than to allow the patient to sit up even for stool; 2, abundance of such food as will sustain and not irritate, viz: sweet and buttermilk, thin broth, and copious draughts of pure water, which carries off effete material; 3, thorough ventilation, even in winter.

Dr. Edward McGuire believes in little medicine; many cases can be treated without it. It is most important to preserve the stomach. He wishes to go on record as opposed to all antipyretics except water. For the first two days he gives quinine for diagnostic purposes.

Regarding rest, he agrees with Dr. Johnston, for we can never tell, even in mild cases, the extent of typhoid lesions. He impressed the importance of administering abundance of liquids, and referred to Pepper's success with nitrate of silver.

Dr. J. A. Hodges.—Cases vary so much that it is difficult to establish any routine plan of treatment. His method may be divided into: 1. Nutritive and tentative, comprising nourishment, rest, attention to the *primæ viæ*, strychnine, and digitalis; for diarrhea, beta-naphthol, and copper arsenite with morphine. He has never seen the latter combination fail. 2. Modified Brandt, which he administers himself. No coal-tar product should be given in a disease whose tendency is to devitalize. 3. Chlorine treatment, which he has used since it was first introduced. For meteorism, sordes, tympanitis, and diarrhea, he has not seen the time when it has not done more than turpentine.

Dr. Hugh M. Taylor thought, in transfusion or normal saline solution, we have an agent of great potency in treating the depression of typhoid fever which threatens life by the heart. Within the past week, this

had been impressed upon him. In the seventh week of fever, a young woman was apparently dying from exhaustion. Was cold and sweating and unconscious from great depression. Respiration, 30 or 40; pulse, 140, and absent at the wrist. The continuance of life seemed a matter of only an hour or two. Whiskey and strychnia and digitalis and caffein and nitro-glycerin had been pushed as rapidly as was thought safe, with no perceptible influence for good. A quart or more of saline solution in the cellular tissue of the thigh and shoulder became diffused by massage, but apparently was not taken up by the vascular vessels; certainly produced no appreciable effect upon the heart. Such was the undistended condition of the blood vessels, even after cording up the arm, that it was difficult to find a suitable vein. Into the open vein the sharp point of the glass pipette of an eye-dropper was fastened by a ligature and the other end of the pipette was fastened in the end of the long tube attached to a fountain syringe. This quickly improvised transfusion apparatus acted nicely. By the time as much as a pint of fluid had been introduced into the vein the pulse was full and strong, and the introduction of a quart in all increased the volume and arterial tension until the moribund patient's pulse was stronger than that of any of the attendants. The skin became dry, the color to the face and lips more natural and the extremities warm. Not much improvement in the breathing was noticed; and while the volume of the pulse was so much improved, its rapidity was not correspondingly decreased. The pulse rate continued very rapid, and the respiration rapid and shallow.

The improvement, after the transfusion, lasted five or six hours, at which time the pulse lost in volume until the wrist-pulse was indistinguishable. Transfusion direct was again resorted to with the same encouraging result of increasing the arterial tension and drying the skin, but no effect upon the pulse-rate or the respiration was apparent. This last function became more and more embarrassed, and was the ultimate cause of death.

His experience in this case impresses him with the belief that we have in transfusion a means of great value in the depression incident to hemorrhage in typhoid fever, and possibly an adjunct in the depressed circulation resulting from any one or more of the many complications arising in typhoid fever.

Dr. J. W. Long agrees with the treatment given by Dr. Gordon, with the exception of digitalis. The criterion of its value is the effect in the case under observation. In some, it acts well; in others, it makes the heart weaker.

Regarding shock sometimes observed in administering the bath, it may be obviated by constant friction to the extremities while the patient is in the water.

Dr. Arthur Jordan adds his evidence as to the success of the chlorine treatment. He believes that in the course of time the antiseptic method will be the accepted one. He thinks that the patient is often over-fed, verified by the tympanites and the appearance of indican in the urine, indicating fermentation in the bowel.

Diagnosis may be made by microscopic examination of the blood. In the first week, there is an increase of polynuclear cells in cases where complications, as of lung and kidney disease may ensue. In the second week there is an increased lymphocytosis diagnosing typhoid from other infectious diseases. In every instance the nucleus of the lymphocyte is larger than that of the leucocyte, indicating nature's method of cure. Another condition is the marked increase of polynuclear cells, which, if occurring in the third week, shows suppurative processes to be abnormally increased.

Dr. J. W. Henson said the action of digitalis is uncertain because of the uncertainty of the preparation.

Dr. George B. Johnston said the Brandt method is the most satisfactory antipyretic measure. The danger line of typhoid is a temperature of 103° . He has seen a temperature of 104° reduced in fifteen minutes to normal; he has seen it kept down for twelve hours; has seen it rise again in two hours.

Dr. Landon B. Edwards thought the abuse of some of the coal-tar derivatives had been emphasized too much in this discussion. It was undoubtedly because the gentlemen had used too large doses of phenacetin, antipyrine, etc., seeking too immediate results. It is too much forgotten that while large or even beyond moderate doses of phenacetin—anything more than four or five grains—reduces arterial pressure; small doses increase and maintain the same. Doses of this drug not exceeding two or three grains, every three or four hours, so as not to exceed twenty grains a day, are safe, and usually effective in keeping the temperature down to 101° or 102° . In moderate doses, it will not reduce the temperature beyond the normal. It is a curious fact that it acts best in reducing fever temperatures during the hours after ten or eleven o'clock in the day, and there is not much to be expected of its after-midnight's administration. There is no objection to combining it with strychnine or digitalis, as he often does. He almost invariably combines it with some antiseptic, such as salol. Like salol, phenacetin is taken up chiefly from the small intestines. And it is not improbable that its long-continued use in small doses favorably influences the typhoid ulcers of the small intestines; for the value of phenacetin, as of antipyrine, as a local application to ulcers in general, is too well known by practitioners to need emphasizing. Between these doses of phenacetin he has come to rely with much confidence upon the "chlorine treatment," as described many years ago by Watson.

later by Murchison, and more recently by Yeo. In a broad-neck, twelve-ounce bottle, put fifteen grains of chlorate of potash; add slowly one drachm of strong hydrochloric acid. The characteristic greenish vapor develops. Add gradually an ounce or two of distilled water, pouring it down the side of the bottle, and put in the stopper so as to let none of the chlorine vapor escape. After awhile, whatever quantity is not absorbed by the water, settles on its surface. Then gradually add more water, and so proceed until the bottle is filled with water. These details as to the preparation are important; for, as Mr. Hugh Blair remarks, a different chemical result follows if water is added in advance of the hydrochloric acid. Dose of this mixture, an ounce every two to four hours. If the taste is disagreeable, add an ounce of syrup of orange peel to the twelve-ounce chlorine mixture. Yeo claims that 24 to 36 grains of soluble quinia added to this mixture, helps its antifebrifuge action; but Dr. Edwards has been better satisfied with the phenacetin in the manner spoken of. As to the chlorine mixture, it promptly cleans the tongue; it perfectly deodorizes the bowel discharges in two or three days, and, especially when combined with the phenacetin treatment, it reduces the febrile temperature; it maintains physical strength and mental clearness; assists in assimilation of food; acts its part as an antiseptic, and shortens the average course of the fever. Of course, such is not the full line of treatment, for recumbency, quiet of surroundings, composure of mind, the sufficient use of water as a drink, and the topical use of cool water sponging or wet packs, the supply of proper nutritious fluid, diet, etc., are essential. Half the battle, it may be, depends on the faithful, well-trained nurse; but fully the other half depends upon the able, experienced, and an ever-watchful, judicious doctor, who does not become a routinist. For the past eight years, Dr. Edwards has adopted the general line above described, with the loss of a single typhoid patient; and that one, in July, 1891, was a case in which he did not follow out the principles above spoken of. That case set in as a profuse hemorrhagic case. Incidentally, he remarked that early profuse, repeated typhoid hemorrhagic cases are those that appear to set at defiance the results of any plan of treatment yet devised. In comparing his results with those who adopt the Brandt, or the Woodbridge, or any other specific plan of treatment, he sees no reason to prefer a change of base. Carter, Czerna, and others, long ago pointed out that small doses of phenacetin increase arterial tension; while all agree that large doses reduce the same, and that it acts directly on the thermogenic centers, lessening the production of animal heat and slightly decreasing heat dissipation. Of course, these remarks are intended to discuss but a partial phase of the important subject of treatment of typhoid fever, and are brought out only because of the surprising disfavor in which coal-tar antipyretics seem to be held by some of the speakers to-night.

In closing the discussion, Dr. Gordon congratulated the Academy on the unanimity of opinion regarding the subject under discussion, and was gratified to have his own views corroborated by the expressions of the different speakers.

He hoped that Dr. Jordan and others, who were devoting special attention to the examination of the blood in disease, would continue a work which, to a greater or less extent, will give us the priceless advantage of accurate diagnosis in the early stages of fever and other morbid conditions. He looked for great discoveries in this department of pathology.

Personally, he had expressed himself as not unwilling to use the coal-tar antipyretics, when indicated in the first days of fever by a sufficiently strong pulse and high temperature. Several patients in the group had been given phenacetin with benefit. And so he agrees with Dr. Edwards that the drugs in question may prove of great service if administered in judicious doses and under justifying circumstances.

With regard to digitalis, Dr. Long had misunderstood the tenor of his remarks, which was to prove that this drug may serve a good purpose by slowing and consequently strengthening an exhausted and rapidly-beating heart. This agent stimulates the inhibitory vagus, and its action can, as a rule, be controlled equally as well as a great many other agents are controlled. It must be reliable, and when used generally be administered when the patient is recumbent, in order to obtain the best effects. He cited the case in which its effects were so marked as a commentary upon Dr. Osler's remark that, personally, he is not convinced that digitalis does good in the failing heart of fevers. The results observed from its use alone, or combined with strychnine, will sometimes be entirely satisfactory. He would not continue it unless its physiological action was produced within a reasonable length of time.

Dr. Taylor's case, in which he had been a willing and profited assistant, was well worthy of mention. He had never before seen so prompt a relief of the symptoms of collapse; and the possibilities of direct transfusion in conditions which were favorable to permanent benefit from this measure, were difficult to estimate.

He would be glad to use the chlorine treatment so highly lauded by Drs. Hodges and Edwards, and intended to do so when opportunities presented for this or any other special antiseptic remedy. In referring to turpentine, the design was only to emphasize the numerous indications occurring at the same time which could be met with this familiar, but none the less valuable drug.

Dr. Pepper's statement (quoted by Dr. Edward McGuire), that one hundred consecutive cases of typhoid fever, occurring in private practice, and first seen, as a rule, in the early stages, had been successfully treated with nitrate of silver alone or in combination; and that under this

invariable treatment in all private cases, for a period of ten years, no death had occurred, was well worthy of consideration, coming from so high an authority. Dr. Frederick P. Henry, of Philadelphia, had commented, however, upon Dr. Pepper's statement, referring to the fact that the cases were in private practice, and that the unusually excellent results were doubtless largely owing to the great advantage of early and good hygienic and medicinal treatment which Dr. Pepper's patients enjoyed.

Dr. Gordon said, in conclusion, that, in his opinion, relapses were due, in the vast majority of cases, to dietetic indiscretions or to a too early rising from bed. It was quite true that relapses did occasionally occur when no special cause could be assigned; but, in his experience, relapses had been owing to the disregard of his injunctions as to diet and exercise. Too much stress could not be laid upon this point.

GYNECOLOGICAL AND OBSTETRICAL SOCIETY OF BALTIMORE.

74th Regular Meeting. The President, Dr. John Neff, in the Chair.

The following officers were elected for the ensuing year: Dr. William S. Gardner, president; Dr. J. Edwin Michael, 1st. vice-president; Dr. William P. Chunn, 2nd. vice-president; Dr. J. Mason Hundley, secretary; Dr. James M. Craighill, treasurer.

Dr. John Neff read the histories of the two following cases of septic infection before abortion:

On the morning of the 9th of April, 1894, she noticed some slight hemorrhage and pain, which became persistent and frequent during the day. At midnight she had a prolonged chill, followed by high fever and profuse perspiration. When I saw her early the next morning her temperature was 104 degrees, pulse 130. On digital examination I found the os resistant and only slightly pervious, hemorrhage slight, and pain trifling and infrequent. Thinking the abortion might be prevented, as it had not been criminally induced, I enjoined absolute rest and gave anodynes. At my next morning visit the temperature was still 104 degrees and pulse 130; frequent chills had occurred during the night and now the miscarriage was inevitable, the fetal portion having passed during the night. The os was now patulous and easily detachable and the dull curette was used to remove the remaining portions. Intrauterine douche of permanganate of potash 5 grs. to ounce, followed by copious use of sterilized water. Thus within a brief time after inception of abortion the uterine cavity was emptied of its contents which were healthful, was antiseptically treated; the temperature remained high, the irregular chills were frequent. During the night arthritic trouble developed in the right shoulder and left knee, the joints became swollen, sensitive and painful. Effusion rapidly took place in the knee joint, distending the joint more and more each day. The fluctuation seemed to indicate a fluid that was

purulent in a character, if not already pus. Aspiration was decided upon on the 17th, and employed, taking from the part ten ounces of sero-purulent fluid, which undoubtedly would have become pus if allowed to remain, and proven destructive to tissues of the joint. No more rigors occurred and the pulse fell to 96, and temperature to 100 degrees within a few hours after the operation. The joint did not refill, but the motion was impaired for several weeks, and four months elapsed before normal restoration occurred. No effusion took place in the shoulder joint, but the arm was painful and its use impaired for two months.

The effusion in knee joint was doubtless of septic origin, as it began almost simultaneously with inception of the miscarriage. There was slight tenderness in pelvic region, but no distention of abdomen or peritoneal investment.

The treatment was sulphide of calcium, grs. 3, every 4 hours, alternater with salicylate of quinine, grs. 5. Full nourishment and stimulation. Hypodermics of morphia to allay pain of joints.

The other case was Mrs. C., aged 26, mother of two children, youngest 18 months old. Had missed two monthly periods, and on December 21, the date for its usual return, she noticed slight hemorrhage and irregular pains. In this condition took a long shopping jaunt that afternoon and evening; the evening was intensely cold. After retiring she was seized with a prolonged chill, which repeated itself a second time, followed by fever and profuse perspiration. When I saw her in the morning I found her temperature 105 degrees, pulse 130. The hemorrhage was still slight and uterine pains infrequent and short. The os being impervious the miscarriage did not seem imminent. During the next twenty-four hours, the irregular chills and high temperature were maintained and the abortion now seemed inevitable, some fragmental tissue having passed and the pain and hemorrhage increasing. The abdominal tenderness was now marked, and especially in the right ovarian region was tense and most sensitive. It now seemed impossible to prevent the abortion, and I dilated and removed the contents which showed no putrefactive change. Employed intra-uterine injections of hot carbolized water. The lochia continued natural and inoffensive; still, antiseptic vaginal douches were employed daily.

The second day she complained of pain in her right hip joint, and I readily recognized the beginning of arthritic trouble, that existed in the previous case just reported. The pelvic tenderness continued, by palpation I detected enlargement and filtration of the right ovary and tubes. The temperature, even with large doses of quinine and antifebrine, continued high, ranging from 103 degrees, A. M., to 105 degrees P. M.

The arthritis lasted three weeks in the acute form and impaired the

use of the joint two months. The pelvic tenderness and infiltration subsided with the acute arthritic symptoms and tedious convalescence began. The treatment employed was large doses of sulphide of calcium and salicylate of quinine, alternating with salicine and cold water bag on groin and hip when the temperature was highest. Gave nourishing diet and mild stimulation; hypodermic injections of morphia to alleviate arthritic pain and to induce sleep.

Dr. William P. Chunn: I do not remember to have seen a case where sepsis made its appearance before abortion. The arthritis in Dr. Neff's case was unusual. In a case recently seen the first symptom of trouble after the abortion was high temperature.

Dr. James M. Craighill: I find that the early miscarriages are the ones that give the most trouble. Many times I am in doubt what to do with these cases.

Dr. T. A. Ashby: I am inclined to think that the case of arthritis was not sepsis. In all cases where the uterus is not completely emptied, I think there is but one thing to do—dilate and curette. I have curetted many such cases and have had no trouble from it.

Dr. William E. Moseley: After many cases of abortion there will be a chill and fever that has no relation to the abortion. After abdominal operation there may be a phlebitis that is not associated with any local infection. We also often find a malarial infection. Use the finger if possible in emptying the uterus, because when the finger can be gotten inside the uterus a much more intelligent idea of the condition of the cavity can be formed. When this can not be done dilate with parallel bars and curette.

Dr. William S. Gardner: The case of arthritis by Dr. Neff of course might have been due to some other cause than sepsis, but associated as it is with the abortion and the general condition of the patient, I think that it is highly probable that it was just such a joint infection as is seen in pyemia. I have seen just such a case where not only the knees, but other joints were involved.

I do not agree with the opinion that we ever have phlebitis after labor or after abortion that is not associated with a local infection, I believe not only that we always have an infection, but also that the infection takes place at the time of operation or labor, though it may not develop to a marked extent until several days have elapsed. I have never seen a case of this kind in which the patient had a perfectly normal temperature for twenty-four consecutive hours, between the labor or operation and outbreak of the septic attack.

Dr. William S. Gardner read the following paper:

"The Lesions Associated With Dysmenorrhea." It has long been recognized that painful menstruation is associated with, if not due to some

pathological condition usually of such character that it can be readily recognized and often corrected. There is limited number of cases where no gross lesion can be detected. And even when there occurs a gross lesion of the internal organs of generation it does not necessarily follow that the dysmenorrhea is due to the lesion or that the curing of such a lesion is found will necessarily relieve the painful menses.

But from a careful clinical study of the lesions found associated with painful menstruation, we will learn more about the direct causal relations between the lesions and the pain, and consequently learn more about the relief of this trouble, which not only makes many a woman uncomfortable, but unfits her for the duty during from 10 per cent. to 25 per cent. of the active period of her life.

I have taken 120 cases that have complained of painful menstruation and have attempted to classify them according to what appeared to be the most important lesion detected. Among the 120 were eight nulliparæ who on account of an intact hymen on the presumption of its presence were not examined digitally; this leaves 112 who were examined.

One of the most striking points noted is the very large number of sterile women; 44, or a fraction less than 40 per cent. belong to this class. Of those who had been pregnant, 12, or over 10 per cent. had never had a child at full term; 15 more, or 13 per cent. had had a miscarriage since the last still born child was born, leaving less than 37 per cent. of the total number whose last pregnancy had come to full term. Without further examination these figures would indicate that in a large proportion of patients suffering from dysmenorrhea there were present lesions which also interfered with conception.

A detailed account of all these cases named would be very tedious, and I will give the list of lesions found, and then make some comments upon a part of them. It should be borne in mind that the lesion noted was not necessarily the only one present, but was the most marked, and presumably the one to which the pain was due. I say presumably because we find these same lesions in patients who have no dysmenorrhea, but to go into the relative aid of these lesions to dysmenorrhea would lead us further than the limits of this paper would allow. Of the 112 patients examined the following were found:

Endometritis, ...	23
Retroversions, ...	14
Pyosalpinx, ...	17
Anteflexions, ...	14
Laceration of Cervix and Endometritis,.....	10
Cervical Stenosis, ...	8
Constipation, ...	7

Retroflexions, ...	4
Prolapsed Ovaries, ...	2
Fibroids, ...	2
Prolapsed Ovaries, ...	2
Prolapsed Uterus, ...	..
Lacerated Cervix, ...	1
Membranous Dysmenorrhea, ...	1
Nothing found, ...	5

112

Of the 23 in whom endometritis was apparently the most marked lesion, 9 had had their last pregnancies terminate in abortions; 5 are known to have gonorrhea, and of the 8 in whom nothing further than a cervical endometritis was noted it is highly probable that a considerable number had had gonorrhea. Only one case that was probably a corporeal endometritis was noted.

Of the 18 retrodisplacements, 13 were retroversions in which no adhesions were detected; 3 retroflexions with no adhesions, and 1 retroflexion and 1 retroversion with adhesions. Two other retroversions with pus tubes are in the list of pyosalpinx cases.

Of the 17 cases of pyosalpinx, 9 were of gonorrheal origin, 2 probably puerperal, and the remaining 6 were due to an infection which could not be traced directly either to gonorrhea or to a puerperal infection.

Ten of the 13 antelexions had never been pregnant; the other 3 having been pregnant one or more times. At least 1 of the 10 is known to have become pregnant after dilatation and gauze packing had been used. This patient had also had gonorrhea.

In 3 of the 8 cases of stenosis of the cervix the lesion was due either to a cicatrix forming after operation on the cervix or after laceration.

The suffering from membranous dysmenorrhea made but one visit. She brought with her a complete cast of the interior of the uterus, and said that she had passed such a cast at each period since her last confinement, which had been five years previous to the visit.

From these cases it is seen that 100 out of 112 patients suffering from painful menstruation who were examined with a reasonable degree of care were found to have some marked organic lesion of the internal generative organs.

The practical conclusion to be drawn is that dysmenorrhea being due in nearly all cases to some local trouble the treatment for its relief must be directed toward the local disease.

Dr. T. A. Ashby: I agree with Dr. Gardner that dysmenorrhea is a symptom, and is due to a local lesion, and I believe that stenosis and ante-

flexion are responsible for a majority of the cases. It is confined largely to the sterile woman or the ones who have been infected. I have seen a few cases of fever and simple ovarian dysmenorrhea where it was necessary to remove the ovaries to cure the pain, but these cases are very rare. In cases where the ovaries were removed the corpora lutea were found to be the same as those of pregnancy. Ovariectomy should be the last resort.

Dr. William E. Moseley: I believe that ante flexion is a much more common cause of painful menstruation than is commonly recognized. I agree with Dr. Ashby that it is the most common cause. The class of cases where you can make out the most direct cause is among the younger women. Dysmenorrhea associated with ante flexion is apt to be in women who are debilitated.

Dr. Gardner: These 120 cases of dysmenorrhea have been collected from about 1,300 women with various complaints. In many cases the menstrual pain was secondary to some other more troublesome discomfort. My statistics certainly do not agree with Dr. Moseley and Dr. Ashby when they state that the majority of patients with dysmenorrhea have ante flexion. Only a fraction over 13 per cent. of the cases which were examined had ante flexion. I think they have both been misled by depending upon their memories instead of upon their written statistics. Patients who suffer from dysmenorrhea due to ante flexion, as a rule, do not have pain at any other time, and this emphasizes that one symptom; while the larger number of patients suffering from dysmenorrhea due to other lesions have other pains and other complaints which mask the dysmenorrhea due to ante flexion being more distinctly remembered.

WILLIAM S. GARDNER, M.D.,

Secretary.

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THERAPEUTICS.

PROFESSOR KITASATO'S ANTI-CHOLERA SERUM.

By DR. A. NAKAGAWA,

Assistant at the Institute for Infectious Diseases, Tokio.

Professor Kitasato's report, dated Tokio, December 6, 1895, has been widely referred to in political journals, both vernacular and foreign, with not a few misunderstandings. To correct such mistakes the following brief abstract has been prepared, with the professor's permission, for the benefit of those to whom the original is unintelligible.

The inoculations for obtaining the antitoxic serum were commenced in May, 1895, with cholera bacteria isolated from one of the earliest cases in the last epidemic. At the time the serum treatment was commenced

at Hiroo Cholera Hospital (August 6, 1895), the supply of the serum was, therefore, very limited, and what was used for injection in the beginning was not all of the desired strength. Nevertheless, some of the animals had already attained quite a considerable degree of immunity, and the efficiency of the serum of such animals is seen in the following experiments:

I.—PRELIMINARY EXPERIMENTS IN THE LABORATORY.

1. Without entering into details of the experiments, it may be stated that for guinea pigs 0.02 mg. (0.0002 c.cm.) was sufficient to protect against the inoculation of several times the fatal dose of cholera culture—the serum and the virus being injected into the peritoneal cavity simultaneously. The guinea-pigs used in this, as well as in all experiments mentioned in the report, are those weighing from 200 to 300 g.

2. If the serum is injected subcutaneously, the quantity required to obtain similar results was found to be considerably larger (0.02 c.cm.).

3. To determine the antitoxic property of the serum, using the word antitoxic in the strict sense, experiments were made with the toxin obtained by warming the twenty-day-old cholera bouillon culture for twenty minutes at the temperature of 55° C. The bouillon culture thus sterilised (the so-called "toxin") was found to be fatal to guinea-pigs in the dose of 1.5 c.cm., when injected into the peritoneal cavity. The antitoxic serum was found to neutralise the effect of 2.0 c.cm. of sterilised bouillon, when injected simultaneously into the peritoneal cavity in the dose of 0.2 c.cm.

Experiments for ascertaining the curative action of the serum were carried on in this wise: A number of guinea-pigs were inoculated with several times the fatal dose of the virus, so that the untreated animals died within twenty-four hours after such inoculation. At the expiration of each successive hour injections were made in some of the animals, and it was shown that those treated not later than seven hours after the inoculation of the virus were cured, while those in which the injections were made after the lapse of seven hours could not be saved by the serum. In other words, if injected during the first third of the entire course of the disease (thus experimentally produced) the serum can be considered curative.

II.—CASES OF CHOLERA TREATED WITH ANTI-CHOLERA SERUM.

(A) 270 cases were admitted into the Hiroo Hospital, Tokio, from August 6 to November 10, 1895. Of these cases 138 died. Rate of mortality 51.1 per cent.

Anticholera serum was employed in 193 cases only, owing to the fact that the supply of serum was inadequate to allow it to be used in all cases.

The rate of mortality among Japanese in nearly all the previous epidemics, as well as that of the last epidemic, has always been about 70 per cent. Without claiming to draw, from a number relatively so small, the final conclusion that the serum treatment was attended with the reduction of 20 per cent. in the mortality statistics, it is evident, at least, that the result of the new therapy was not an unfavorable one. Moreover, there is reason to believe that with a sufficient supply of very efficient serum the rate of mortality can still be lowered.

(B) Subsidiary results of serum injections are similar to those of diphtheria antitoxin: 1. Urticaria (very common.) 2. Arthralgia (only observed in 18 cases). 3. Myalgia (only observed in 6 cases).

(C) Obviously there must be difference in the prognosis of each case according to the time which elapsed before the patient came under treatment. Such analysis is given in the following table:

Number of Hours from the Invasion till First Injection.	Cases.	Deaths.	Percentage.
Less than 8 hours	12	0	0
8 to 12 hours	18	4	22.2
12 to 24 "	53	17	32.1
24 to 28 "	63	25	39.7
48 to 72 "	31	12	38.7
Over 72 "	16	5	31.1

(D) Three cases of cholera were observed in children under two years of age.

Bacteriological examination, microscopic as well as cultural, was made in every case.—British Medical Journal.

THE TREATMENT OF ASTHMA IN CHILDREN.

Perier (*Journal de Med. de Paris*, March 31, 1895) gives the following directions for the treatment of this condition in children:

I. During the simple asthmatic crisis.

1. Open the windows and give the patient air, without, however, producing a draught, and apply mustard poultices and plasters to the limbs.

2. If the windows cannot be opened, and if the poultices do not produce the desired result, fumigate with datura, nitrate-paper, or pour out some drops of pyridine, of ether, of iodide of ethyl (in the case of older children) in the neighborhood of the child upon a handkerchief or in a

saucer. The author has often helped a patient who was obliged to live in an overheated atmosphere, by placing over an alcohol lamp and keeping constantly boiling, a large dish of water containing leaves of eucalyptus.

3. Give the following potion every quarter of an hour in dessertspoonful doses:

R Tr. belladonnæ, gtt. v to x;
Tr. grindeliæ, gtt. x to xx;
Tr. lobeliæ, gtt. xx to xxx;
Syr. etheris, ʒ iiss to ʒ v;
Syr. aurantii florum, ʒ v;
Aquæ calcis, ʒ ii, ʒ viiss.

4. If there is no improvement give a dose of antipyrin proportionate to the age of the child ($1\frac{1}{2}$ grains for each year of the age [?]) in sweetened water:

II. In crisis accompanied by acute bronchitis or pulmonary congestion.

1. Cover the chest with mustard cataplasms or dry cuppings,

2. Fumigations and inhalations, as in the foregoing case.

3. Every quarter of an hour a tea or dessertspoonful of the following:

R Tr. belladonnæ, gtt. v to x;
Syr. ipecacuanhæ,
Syr. etheris.
Syr. codeinæ, of each, ʒ iiss;
Syr. aurantii florum, f ʒ ii;
Liquor calcis, f ʒ ii.

III. In simple spasmodic asthma outside of the crisis.

1. Give before lunch and dinner a tea or dessertspoonful of the following for fifteen days:

R Potass. iodidi, ʒ i to ʒ iiss;
Syr. toluani,
Syr. aurantii, of each, f ʒ iii.

2. During the next fifteen days a teaspoonful of the following before lunch and dinner:

R Sodii arsenatis, gr. $\frac{5}{16}$;
Aquæ destillata, f ʒ viiss.

To be taken in a little malt extract or bitter beer.

3. Two days of the week suspend the treatment and give a teaspoonful of the following laxative:

R Sulphur sublimat.,
Potassii bitartr.,
Magnes. calc., of each, ʒ xv;
Pulv. anis., ʒ ss.

4. A simple diet, from which are excluded spiced and highly-seasoned meats, fish, etc.

5. Frictions each morning over the whole body with flannel or hair gloves.

6. Exercise as much as possible in the open air.

7. The summer spent in high altitudes.

IV. Asthma with chronic bronchitis and emphysema.

1. Treatment as given above, with the addition of the following:

2. Every morning for fifteen days a quarter of a glass of Labrassere water in hot milk.

3. During the next fifteen days a dessertspoonful of the following in milk:

R Calcii iodidi, $\bar{\text{J}}$ i to $\bar{\text{J}}$ iiss;
 Syr. tolutani,
 Syr. capillorum, of each, $\text{f } \bar{\text{J}}$ iii;
 Syr. codeinæ, $\text{f } \bar{\text{J}}$ i to $\text{f } \bar{\text{J}}$ iss.

4. Every second day paint alternately the anterior and posterior aspects of the chest with tincture of iodine.

5. Baths of compressed air.

6. In summer a vacation in a region of medium altitude.

V. Asthma in malarial subjects.

1. General treatment as for Class III., with the insistence on the use of the arsenical formula for twenty days, to ten of the iodide.

2. During the period of incubation give twice daily of quinine hydrochloro-sulphate, 2 to 5 grains, in capsules or suppositories, or as follows:

R Quininæ hydrochloro-sulphatis, gr. iii to vi;
 Syrup. rubi idæi, $\text{f } \bar{\text{J}}$ i;
 Aq. dest., $\text{f } \bar{\text{J}}$ ii.

Sig.—A dessertspoonful every hour and the measures additional as employed in I.

VI. Hay fever.

1. During the oncoming of the attack introduce into the nares absorbent cotton saturated with the following:

R Cocaine hydrochlor., gr. viiss;
 Cherry-laurel water, $\bar{\text{J}}$ iiss.

2. Give the following:

R Antipyrin, gr. viiss to xv;
 Syr. aurantii,
 Aq. destillatæ, of each, $\bar{\text{J}}$ iss,

Sig.—A dessertspoonful every half hour.

Or quinine may be given as above.

3. Send the child to the mountains or to the sea.

4. Look carefully for the cause—gout, neuritis, hypertrophic rhinitis.

MEDICAL NEWS AND NOTES.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Preliminary Press Notice of the Ninth Annual Meeting at Richmond, Va.

The ninth annual meeting of the American Association of Obstetricians and Gynecologists will be held at the Hotel Jefferson, Richmond, Va., Tuesday, Wednesday, and Thursday, September 22, 23, and 24, 1896.

The proprietors of the "Jefferson" offer special rates to the Fellows of the association, their families and guests, as well as to any physicians who come to attend the meeting. It is confidently expected that the railways will offer transportation at a uniform rate of a fare and a third on the certificate plan to all in attendance. Let all obtain certificates from their local ticket agents, or from the nearest point where certificates are granted.

OUTLINE PROGRAMME.

The association will meet in executive session with closed doors on Tuesday, September 22, at 9:30 o'clock A. M., for the election of new Fellows. The open session for the reading of papers will begin at 10 o'clock A. M. Recess for luncheon at 1 o'clock P. M. Afternoon session at 3 o'clock P. M. An evening session will be held Tuesday at 8 o'clock P. M.

Morning session will begin Wednesday at 9:30 o'clock A. M. for the reading of scientific papers. Recess at 1 o'clock P. M. Afternoon session at 3 o'clock P. M. Executive session at 6:30 o'clock P. M. Annual dinner at 8 o'clock P. M.

Thursday morning the session will begin at 10 o'clock A. M. Recess at 1 o'clock P. M. Afternoon session at 3 o'clock P. M. Final adjournment at 5 o'clock P. M. A full attendance is specially requested at the final session.

PAPERS PROMISED.

NOTE.—No attempt is made to arrange papers in the order in which they are to be read. That will be done in the permanent programme.

1. Principles and progress in gynecology. President's address. Joseph Price, Philadelphia.

2. Vaginal hysterectomy by the clamp method, Sherwood Dunn, Los Angeles.

3. Further experience with appendicitis, A. Vander Veer, Albany.

4. Relation of malignant disease of the adnexa to primary invasion of the uterus, A. P. Clarke, Cambridge.

5. Treatment of puerperal septicemia, H. W. Longyear, Detroit.
6. Treatment of posterior presentation of the vertex, E. P. Bernardy, Philadelphia.
7. Relation of local visceral disorders to the delusions and hallucinations of the insane, W. P. Manton, Detroit.
8. Differential diagnosis of hemorrhage, shock and sepsis, Eugene Boise, Grand Rapids.
9. Movable kidney: local and remote results, A. H. Cordier, Kansas City.
10. Pathology and indications for active surgical treatment in contusions of the abdomen, W. G. Macdonald, Albany.
11. Some causes of insanity in women, George H. Rohé, Sykesville.
12. Subject to be announced, John Milton Duff, Pittsburg.
13. Shall hysterectomy be performed in inflammatory diseases of the appendages? L. H. Dunning, Indianapolis.
14. Subject to be announced, Rufus B. Hall, Cincinnati.
15. Subject to be announced, George Ben Johnston, Richmond.
16. Dynamic ileus: with report of cases, J. W. Long, Richmond.
17. Faradic treatment of uterine inertia and subinvolution, Charles Stover, Amsterdam.
18. A plea for absorbable ligatures, H. E. Hayd, Buffalo.
19. Treatment of the stump, J. F. Baldwin, Columbus.
20. Limitations in the teaching of obstetrics and gynecology as determined by state medical examining boards, William Warren Potter, Buffalo.
21. Subject to be announced, Walter B. Chase, Brooklyn.
22. (a) The philosophy of drainage; (b) Treatment of the pedicle in hysterectomy or hysteromyomectomy in the abdominal method, Geo. F. Hulbert, St. Louis.
23. Removal of the uterine appendages for epilepsy and insanity; a plea for its more general adoption, D. Tod Gilliam, Columbus.
24. Albuminuria of pregnancy, A. Fr. Eklund, Stockholm.
25. Subject to be announced, Lawson Tait, Birmingham.
26. Unnecessary and unnatural fixation of the uterus and its results, James F. W. Ross, Toronto.
27. Sarcoma of the Urethra, Charles A. L. Reed, Cincinnati.
28. Appendicitis as a complication in suppurative inflammation of the uterine appendages, L. S. McMurtry, Louisville.
29. Gunshot wounds of the abdomen with the new gun, J. D. Griffith, Kansas City.
30. Subject to be announced, Walter B. Dorsett, St. Louis.
31. Subject to be announced, W. E. B. Davis, Birmingham.
32. Subject to be announced, E. Arnold Praeger, Los Angeles.

33. Tubo-ovarian cysts with interesting cases, A. Goldspohn, Chicago.

34. Obstruction of the bowels following abdominal section, Geo. S. Peck, Youngstown.

35. Memorial of Dr. Hiram Corson, Traill Green, Easton.

Correspondence is pending concerning additional papers. All titles must be offered before August 25th, when the permanent programme goes to press. The executive council directs attention to the following by-law.

PAPERS.

VI. The titles of all papers to be read at any annual meeting shall be furnished to the secretary not later than one month before the first day of the meeting.

No paper shall be read before the association that has already been published or that has been read before any other body.

Not more than thirty minutes shall be occupied in reading any paper before the association.

Abstracts of all papers should be furnished to the secretary at the meeting.

All papers read before the Association shall become its sole property if accepted for publication; and the Executive Council may decline to publish any paper not handed to the secretary complete before the final adjournment of the annual meeting.

Dr. George Ben Johnston, 407 E. Grace street, Richmond, Va., is chairman of the committee of arrangements, who should be addressed in regard to hotel accommodations and railway fares.

WILLIAM WARREN POTTER, Secretary. JOSEPH PRICE, President.

St. Louis, July 30, 1896.

I desire to announce to you that the date of the meeting of the Mississippi Valley Medical Association has been changed to September 15, 16, 17 and 18, in order to permit the members of their families to take the opportunity accorded by this change to make a pleasant tour through the Yellowstone Park, so justly celebrated as the Wonderland of America.

Prominent resident members of our association in St. Paul and Minneapolis are formulating plans for the special Yellowstone Park excursion trip, to leave on the evening of September 18, arriving in Mammoth Hot Springs, in the Yellowstone Park, about noon on the following Sunday, and devoting the following five days to the wonders of this remarkable region, returning to St. Paul, Sunday, September 27.

The cost of the trip, including all expenses west of St. Paul, will be announced in due season, but we are authorized to say that the figure will be a very favorable one, and we simply wish at this time to make the pre-

liminary announcement of this most enjoyable feature of the St. Paul meeting, so as to give members the opportunity of making their plans in advance to join the party. It is desirable that there be a party of one hundred or more, in order to obtain the benefit of the special train service in both directions.

It is urged that all members who desire to join the party should send their names to Dr. C. A. Wheaton, Chairman of the Committee of Arrangements, St. Paul, at as early a date as possible. If you desire to read a paper before the meeting, please send me the title at once. Very truly yours,

HANAU W. LOEB,
Secretary.

The sixth annual meeting of The American Electro-Therapeutic Association will be held on Tuesday and Wednesday, September 29 and 30, and Thursday, October 1, 1896, in Allston Hall, the Studio Building, on Clarendon street, near St. James avenue, Boston, Mass.

The Brunswick Hotel, corner Boylston and Clarendon streets, will be the headquarters of the association during the meeting. Terms reduced to \$4 per day for Fellows and their friends. The Copely Square Hotel, corner Exeter street and Huntington avenue, terms reduced to \$3 per day, is also located in close proximity. For rooms, etc., apply either to the proprietors, or to Dr. W. H. White, No. 222 Marlborough street, Boston, Mass., who, as the Vice-Chairman of the Committee of Arrangements, will reserve rooms.

Prof. A. E. Dolbear, Tufts College, Mass., is the Chairman of the Committee of Arrangements.

Dr. W. H. White, 222 Marlborough street, Boston, Mass., is the Vice-Chairman of the Committee of Arrangements.

Dr. Frederick H. Morse, Melrose, Mass., is the Chairman of the Committee of Exhibition.

The next annual meeting promises to be a greater success than any former one. Great interest is shown in all quarters; a large attendance is promised. Many candidates of national reputation are proposed for membership, so that the amendment to increase the limit of members becomes a necessity. The best talent has already announced papers, a larger number than ever before, at this early date; material almost sufficient to make a programme for the session of unusual interest. There will be two discussions of importance in electro-therapeutics, interesting reports of all standing committees, several scientific lectures on the first evening, with demonstrations and stereoscopic views (including the Roentgen X-Rays, and electric principles in the treatment of diseases), given by eminent talent.

The Committee of Arrangements has surprises in store for the social element in receptions and excursions.

The exhibition promises to be a good feature, and of more than usual interest.

The fifth annual volume of The Transactions of the American Electro-Therapeutic Association is now on press, and will be ready for delivery about the end of July, 1896; illustrated, cloth bound, gilt lettering, octavo, about 300 pages. I am, very truly yours,

ROBERT NEWMAN, M. D., President. EMIL HEUEL, M. D.,

64 W. 39th St.

Secretary.

As far as we are aware, says the Occidental Medical Times, the first Society on this Coast to take up the matter was the Sacramento Society for Medical Improvement. It seems proper that action of this character should be initiated here, as the Society is the oldest medical organization in this western territory. The resolutions presented at the December meeting are clear, concise, and unmistakable in character. They are as follows:

Whereas, The New York Life Insurance Company and the Equitable Life Assurance Society have recently adopted a graded scale of fees for medical examinations, the practical effect of which will be a reduction of the Medical Examiner's income from these sources by about 40 per cent.; and whereas, these companies, claiming to be amongst the largest and strongest in the world, have, hitherto, in common with all other first-class "old line" life insurance companies, paid a uniform fee of \$5 for medical examinations, insisting that the same care be used in examining applicants for small as for large policies; and whereas, under the proposed schedule, no reduction is made in the amount of work performed or in the degree of responsibility exacted; therefore, be it

Resolved, That we, as physicians, recognize that all life insurance is based on mortality tables and on the probable life expectancy of the assured, in arriving at which the Medical Examiner is the most important factor, and that in the past he has been the most valuable as well as the most essential feature in the establishment of life insurance companies.

Resolved, That we cannot recognize, as a principle governing our remuneration for exactly similar services, the amount of premium paid by the applicant, or the profit derived by the company from any individual risk.

Resolved, That such methods, having no foundation in reason or justice, are contrary to all business principles, and must inevitably lead to a lower standard of examinations, with correspondingly disastrous results.

Resolved, That the Sacramento Society for Medical Improvement protests against methods that are unfair, irrational, and indefensible, and on behalf of its members, pledges them to absolutely decline to examine

applicants for life insurance for any "old line" company, for any fee less than \$5, for each and every examination made.

Resolved, That copies of these resolutions be transmitted to every medical society in California, to all State medical societies, and to the American Medical Association, requesting that concerted action be taken in the premises.

The eighth annual meeting of the Tri-State Medical Society of Alabama, Georgia and Tennessee will be held in Chattanooga, October 13, 14, and 15, 1896.

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MISCELLANEOUS.

THE DEMAND OF SCIENCE: VIVISECTION.

Physicians and others interested in the progress of scientific medicine will do well to take note of the organized effort which is now being made in the District of Columbia and in the State of Massachusetts to secure the enactment of laws for the restriction of experiments upon the lower animals. It is scarcely necessary to call attention to the fact that without such experiments there could be no scientific biology, and medicine would have no scientific basis. Our knowledge of physiology, of toxicology, and of the action of many important medicinal agents has been largely gained in this way. Our precise knowledge of the etiology of a considerable number of infectious diseases has been obtained by inoculating susceptible animals with pure cultures of the various pathogenic bacteria, and could have been obtained in no other way. By such experiments the demonstration has been made of the specific pathogenic power of the anthrax bacillus, the spirillum of relapsing fever, the tubercle bacillus, the glanders bacillus, the diphtheria bacillus the streptococcus of erysipelas and of puerperal fever, the micrococcus of pneumonia, etc. The prevention of hydrophobia by Pasteur's method, the treatment of diphtheria by the antitoxin, the production of bovine vaccine virus, and other practical applications of the knowledge already obtained would be impossible if those who are urging anti-vivisection legislation could have their way. We cannot stop to enumerate the various important practical benefits which surgery has derived from animal experimentation; but it is evident that the experience gained in this way as regards the comparative safety of different methods of ligating arteries, of closing wounds of the intestines, etc., has resulted in great improvements in surgical technique and in the saving of numerous valuable lives.

Yet, there are those who maintain that no valuable results have been attained by experiments upon the lower animals, and the anti-vivisection

literature, together with much sensational nonsense, contains quotations from the writings of certain physicians which appear to support this view. No doubt these quotations, to a certain extent, are garbled, and in their proper connection would not give such positive testimony as to the ignorance of the physicians to whom they are credited. For, to deny the importance and value of the results which have been obtained by experiments upon the lower animals, is to give evidence of lamentable ignorance as regards the present position of the biological sciences, and especially of scientific medicine. But the argument that no results of importance have been attained, in view of the unimpeachable evidence to the contrary, is no longer given a very prominent place in anti-vivisection literature. This seeks rather to carry on the propaganda, which had its origin in England more than twenty years ago, by exaggerated accounts of the cruelty of the experiments performed; and the susceptibilities of many well-meaning and estimable members of the community have been aroused by the harrowing details of experiments which they are led to believe are frequently repeated in biological and pathological laboratories, but which few of those who devote their lives to research work in such laboratories have ever witnessed.

That physicians and others engaged in investigations, having for their object the promotion of human knowledge and the prevention or mitigation of human suffering, are less humane than the members of the societies which have been organized for the prevention of cruelty to animals cannot be admitted for a moment. To pass laws subjecting them to penalties and to espionage by persons ignorant of the nature and objects of their experiments, as proposed, would not only seriously hamper research work in all lines of biological investigation, but would be an uncalled for reflection upon the humanity of those members of the medical profession, and others, who are engaged in investigations of this nature. As a matter of fact anesthetics are habitually administered in all experiments which involve an amount of pain worthy of consideration; but they are not considered necessary in trifling operations, such as the administration of a hypodermic injection or the vaccination of a calf for the purpose of propagating vaccine virus.

It is difficult to understand why these mischievous attempts should be made to secure legislation the effect of which would be to restrict scientific investigation, when there is such a broad field in other directions in which the crusade might be carried on with greater propriety. The trapping of animals for their furs is going on in all parts of the world, and the victims are held for hours, or even days, in the sharp jaws of the trap before they are finally dispatched. The huntsman leaves his uncaptured, wounded game to a lingering death. If he is a humane man, he quickly kills the wounded bird or animal when captured, and it has

not been thought necessary to pass laws requiring him to do so. The fisherman plays the bass or salmon with a sharp hook in its mouth for an hour or more, and no one protests, but the teacher of biology is to be prevented by act of Congress from exhibiting the circulation of the blood in the blood-vessels of the mesentery of a curarized frog. The farmer, by a cutting or crushing operation, castrates his colts, calves, sheep, and pigs, and capons are made by a painful cutting operation, but no one proposes legislation requiring the use of anesthetics in the performance of these operations. Under these circumstances, it is not surprising that members of the medical profession in general resent the officious meddling of the anti-vivisectionists in matter regarding which they, as a rule, have no personal knowledge or responsibility.—*Editorial American Medico Surgical Bulletin.*

EXCESSIVE MASTURBATION IN A GIRL OF SEVEN YEARS.—Lanphear reports (*Alienist and Neurologist*, 1895, xvi, 460), a case of masturbation in a female seven years of age. She was of good family without neurotic taint.

When three years of age she was found producing friction of the vagina with her index and middle fingers, and upon being watched was found to be in the habit of masturbating two or three times each night. At this time she was examined by a physician and no abnormal condition of the genitals found, except a slight hyperemia. Under proper treatment she seemed to be cured, becoming a plump, bright, exceedingly intelligent child. She was sent to work at the age of six. Soon numerous reports came in that she was having intercourse daily with a number of boys, ranging from ten to fifteen years of age, and upon investigation this was found to be true. She was withdrawn from school and kept from the companionship of boys, but occasionally would escape from home and invariably be caught under some back stairs or in an alley enjoying herself in the sexual act with some playmate. She was then confined strictly to the house, and was directly caught masturbating; in this practice she kept getting worse in spite of almost constant watching; the moment her mother's or sister's gaze would be directed elsewhere her hands would go under her clothing and the excitation begun. At last she became so bad that unless her hands were tied she would attempt to masturbate regardless of who might see her. At this time (when her hands were tied) she would sit for hours gazing into vacancy; mentally she appeared dull and stupid, paying no attention whatever to books or playthings, never engaging in conversation—briefly answering "yes" or "no" to inquiries or disdaining to answer if she felt so inclined; she lost flesh rapidly, became pallid with dark circles around the eyes; she ate little, preferring to sit at the table and

secretly titillate the clitoris and vagina until repeated orgasms were produced and she would become limp and listless; but her sleep was good.

The mons veneris and clitoris was exceedingly large—as large as in a fully developed woman; the vagina and hymen somewhat congested; the hymen greatly stretched. No pathological condition of the rectum or of the genitals could be detected. The irritation was therefore thought to be of central origin.

She was advised to go to the country for the summer, with constant out-door life and a vigilant pleasant companion, who would prevent her masturbating during the day, using straps at night until she could be trusted without; with moral suasion, and the internal use of

R Potassi bromidi ̄ ss
Extracti salicis nigrae fluidi
Mucilag. acaciæ aa ̄ ij

Misce. Sig. Teaspoonful after meals and at bedtime. With this, good, rich food and enough exercise daily to make her tired.

The fluid extract of "pussy willow" was prescribed because with some patients it acts as a most powerful sexual sedative.

She could not be hypnotized. She took the mixture for two months. She was looking much better, was quite bright intellectually and said she believed she could control her inclinations if not watched—in fact, she asserted that she did not wish to masturbate any more, and she seemed really anxious to get well. The following prescriptions were advised:

R Sodii bromidi ̄ v
Tinct. hyoscyami ̄ i
Elix. simplicis ̄ ii
Misce. Sig. Teaspoonful after each meal.
R Quininæ sulphat ̄ ii
Camphoræ monobrom ̄ ss
Ferri sulphat. exsiccāt ̄ i

Misce et ft capsul No. XL. Sig. One capsule one hour after each meal.

The iron was given on account of the anæmic condition. After two bottles of the mixture were taken the compound syrup of hypophosphites was substituted, and the capsules were continued.

She improved rapidly, so that in the autumn, she was placed in a convent to pursue her studies. At Christmas time she was reported as in excellent condition, but since that date no details have been obtainable. The prognosis in such a case is an interesting, but unanswerable question.—Pediatrics.

THE CAUSES OF DEATH OF PROMINENT PERSONS.—In the Journal of the American Medical Association for March 28, Dr. Ralph S. Michel writes that he has thought it would be of interest to make a collection of facts in regard to the deaths of celebrated persons. It was impossible, he says, to ascertain the cause of death in many instances, for frequently it was not known or stated; in many cases it was given simply as a fever. The following he believed to be quite accurate:

Early in the spring of 1616 Shakespeare and his boon companions, Ben Jonson and Michael Drayton, spent the evening at a tavern at New Place. All became too much intoxicated to reach home, and they remained out all night on the ground. The consequence to Shakespeare was a fever of which he died in a few days. It was undoubtedly pneumonia, Dr. Michel thinks.

Lord Bacon died at the age of sixty-five, a martyr to science. While out riding, one winter day, it occurred to him that snow would preserve the flesh as well as salt. Accordingly he alighted, bought a hen, and stuffed it with snow. While doing this he became very much chilled and was too sick to return home. He stopped at a friend's house, where he was put in a cold, damp room, and he died in a few days, probably of pneumonia.

Burton, the author of "The Anatomy of Melancholy," believed in astrology. He calculated the time of his death by the stars, and he died at the time assigned, but he was suspected of taking something to hasten it in order to make it conform to his calculation.

Ben Johnson had several attacks of apoplexy. As a consequence his mental faculties became much impaired, and his last days were dark and gloomy.

Motherwell died at the age of thirty-eight of apoplexy.

Benjamin Franklin had gout, also cystic calculus, and the attendant inflammation of the bladder confined him to bed for a year. He was then eighty-four years of age. The immediate cause of his death was abscess of the lungs.

Washington, at sixty-seven years of age, died of acute laryngitis complicated by œdema of the glottis. On December 12, 1799, he rode over his estate on horseback, and, as it was a day of rain and sleet, he became thoroughly chilled. He contracted a severe cold, and at the end of two days was very sick. Before sending for a doctor he had his overseer bleed him. When the doctor came he bled him again. As there was no improvement, a consulting physician was called in, and again he was bled. Finally, they gave him tartar emetic and calomel, they also applied fly blisters to his throat. This medical treatment has been the subject of much criticism, Dr. Michel remarks.

Edward Gibbon, the historian, had the largest hydrocele on record—as large as a bucket. Repeated operations for relief exhausted him, and he died of a fever brought on thereby at the age of fifty-seven.

Napoleon died of cancer of the stomach.

Thomas Grey, author of "An Elegy Written in a Country Church-yard," died at the age of fifty-seven. He was subject to hereditary gout. One day, at dinner, he was taken suddenly and violently sick with pain in the stomach, and died on the sixth day.

William Collins, the poet, died at thirty-six years of age of paresis or insanity, brought on by dissolute and intemperate habits.

Akenside died suddenly at forty-nine years of age of diphtheria.

Burns died at the age of thirty-seven. Of convivial habits, he perished from drink and exposure. One day in January, 1796, he dined at a tavern in Dumfries. He was barely convalescent from a spell of sickness, and was in no condition to stand exposure. The night was cold, and Burns, wandering homeward in an intoxicated condition, sat down upon a doorstep and fell asleep. Rheumatism supervened, and, although he lived until the next July, he never recovered. During the last few days of his life he was in a state of low muttering delirium.

Byron was born with clubfoot. His mother who was a misanthrope, always spoke of him as a lame brat. This defect was finally remedied to the extent of enabling him to wear a common boot. He early showed signs of obesity. This was to him a matter of much chagrin, and he combated the tendency by very low diet and medicine. He died in Greece at the age of thirty-six, of heart complication, which set in during an attack of acute inflammatory rheumatism. Death was sudden.

Oliver Goldsmith died at forty-five years of age. He was a man of somewhat irregular habits, and was attacked with dysuria, probably amounting to strangury. His death was attributed to James' powders, which he would take, contrary to the advice of his physician. But, as he died of strong convulsions, it is likely death was caused by uræmia. James' powder was a secret remedy. It cannot now be prepared as it was by Dr. James, says Dr. Michel, owing to the ambiguity in the specifications placed on file in the Court of Chancery. But it is composed of antimonious acid and phosphate of calcium, with some sesquioxide of antimony. Dr. James was contemporary with Goldsmith, and the powder he used was probably prepared by Dr. James himself. If Goldsmith had perished from an overdose of it, his symptoms would have been vomiting, purging and collapse.

James Beattie died of palsy.

Robert Fergusson, who was intemperate, died insane.

Chatterton died at the age of seventeen, of arsenical poisoning—a suicide. He was driven to the act by poverty and neglect.

Falconer, the author of "Shipwreck," was drowned by the foundering of a ship off the east coast of Africa.

Martin Luther died of violent inflammation in his stomach.

Cromwell died of remittent fever.

John Leyden died of the same fever in Java.

Sir Walter Scott had several strokes of apoplexy. His memory failed, and softening supervened. The end came at sixty-one years of age.

Shelley was drowned by the capsizing of a boat in the Bay of Spezia.

Keats and Charles Wolfe both died of consumption.

Voltaire died of strangury, probable due to enlarged prostate. Very much has been said, says Dr. Michel, by ecclesiastics about the agony of his last days, as though it was a judgment for his outspoken agnosticism. In the days of 1778, when this condition received no treatment worthy of the name, what physician would doubt that the last days of Voltaire, who died when he was eighty-four years old, of strangury, must of necessity have been agonizing?

Galileo had stone in the bladder. With care, says Dr. Michel, he might have lived to shed upon that benighted time the rays of his intellectuality much longer. But he and the church differed on astronomy. Galileo asserted that the earth traveled around the sun. The church would brook no such heresy. Galileo was dragged out in the winter, jolted over rough roads in bad weather; to appear before the inquisition. Exposure, imprisonment, and ill usage killed him—a martyr to progress.

John Milton died at sixty-five years of age of gout fever, or gout struck in, as it was called—our retroducent gout.

Sir Isaac Newton was long a sufferer from gout and stone in the bladder. He is supposed to have died from the latter.

Dean Swift once pointed to a dying tree, and said: "I shall be like that tree—I shall die at the top." He had Ménière's disease, which produced paralysis, then aphasia, and finally a decay of all the mental faculties. He lived a year without speaking a word.

Edgar A. Poe was picked up in the streets of Baltimore one morning in 1849, and taken to a hospital, where he died without regaining consciousness. His death was attributed to drink and exposure. There has always been a suspicion that he may have been the victim of an assault. He was thirty-eight years old at the time of his death.

Letitia E. Landon—L. E. L.—died of an overdose of prussic acid.

Washington Irving died at seventy-six years of age, suddenly, of disease of the heart, in his own Sleepy Hollow.—New York Medical Journal.

THE OVARIES AND THE DETERMINATION OF SEX.—Some interesting observations have recently been made by Seligson upon the relation which the ovaries bear to the determination of sex. His theory is that ova from the right ovary develop into males, those from the left into females. Experimenting upon rabbits he found that when the right ovary had been removed only female young were born, while when the left ovary had been extirpated only male young were brought forth. But he further draws attention to another fact. He states that in all the cases of tubal pregnancy of which he could obtain notes, where the sex of the foetus was given, 19 in all, those of the right side were without exception males, and those of the left females. These data certainly seem to add weight to his argument, and, moreover, are of great interest. If the author's observations in this regard are confirmed by subsequent inquiries the debated question of what the laws are which govern the determination of the sex of the foetus will have been advanced a stage toward its solution. But, of course, many repeated investigations and experiments will have to be undertaken and recorded before the evidence upon this point raised by the author's conclusions could be regarded as worthy of acceptance from a scientific standpoint.

American Druggist and Pharmaceutical Record.

PRIMARY CANCER OF FALLOPIAN TUBE.—Fischel (*Zeitschrift f. Heilkunde*, vol. xvi, Parts 2 and 3, 1895, Prague) relates a case of this disease. The patient was a married woman, aged 40. She had only once been pregnant, aborting at the sixth month. After suffering for some time from a free yellow discharge, severe hypogastric pains set in six months before operation. The period ceased for three months and then became regular once more. An oval tumor rose above the pubes, reaching above the umbilicus. On pelvic exploration malignant deposits were detected in Douglas' pouch. On March 25, 1894, Fischel operated. There was a little perfectly clear ascitic fluid. The visceral peritoneum was covered with metastatic deposits. A large cystic tumor was exposed: it contained a fluid which looked like rice soup, being mixed with broken-down papillomatous masses. The tumor was the right tube extremely dilated, especially in its abdominal half. Unfortunately the left tube, which it appears was similarly diseased, could not be removed as it was firmly blended with adjacent organs by malignant deposits. The patient recovered from the operation, and enjoyed a few months of relatively good health. She died about the end of September, 1894. There was no post-mortem examination. The tumor formed a large retort-shaped cyst containing on its inner wall abundant papillomatous masses. On microscopical examination it was found that the growths were malignant. The case, in fact, was a true instance of malignant degeneration of papilloma of the tube.—Br. Medical Journal.

A HARD CASE.—*Le Scalpel*, a very ably edited Belgian medical journal now in its forty-ninth year, relates the following case as a warning to surgeons against *trop de zèle*. A practitioner of Brussels had a patient who was suffering from a uterine affection. A specialist having been consulted curettage was recommended, and agreed to by both the woman and her husband. She accordingly entered an institution in order to undergo the operation, but while it was in progress the surgeon became aware, after dilatation of the cervix uteri, that he had to do with carcinoma. The patient being under the influence of an anesthetic, and the husband absent their consent could not be obtained; but the operator nevertheless decided to perform hysterectomy on his own responsibility. All at first went well, but unfortunately the woman died subsequently from hemorrhage, whereupon the husband sued the practitioner, claiming damages to the extent of 50,000 francs for the loss of his wife. The Ministry of Justice came to the conclusion that 5,000 francs would suffice; but at the time of writing judgment had not yet been pronounced. The case points to the inadvisability of performing such an operation as hysterectomy without the consent of the patient and her husband having been previously obtained. In the above case there is no reason why the operator, having ascertained the nature of the disease after dilation of the cervix, should not have waited a few days before proceeding to remove the uterus.

REMARKS ON OPERATION ON THE GASSERIAN GANGLION:—W. W. Keen (*Am. J. of Med. Sci.*, January, 1896.)

The author used the Hartley-Krause operation, and discussed the subject under six heads:

1. Access to the cranial cavity is had by means of an osteoplastic flap formed in the temporal region by a large horseshoe-shaped incision, one end of which begins just in front of the ear, the other an inch behind the orbital margin of the external angular process.

2. Hemorrhage from the middle meningeal. The small branches are ligated by means of the smaller semi-circular needle of Hagedorn threaded with silk. When in a bony canal the bone is rapidly gnawed away, while the fingers protect the vessel, which is then ligated; and in rupture at the foramen spinosum a plug of iodoform gauze controlled the hemorrhage. This was removed carefully, on the third day, without any further trouble.

3. Lifting the temporo-sphenoidal lobe from the middle fossa of the skull is best done gently by the forefinger, and the brain and its membranes are held up by a spatula. Hemorrhage from the small vessels of the middle fossa is controlled by packing with iodoform gauze.

4. Removal of the ganglion and its third division is accomplished

by seizing the ganglion itself with a pair of hemostatic forceps, cutting the second and third divisions at their foramina; then by gentle but firm rotation of the forceps the ganglion can be avulsed.

The author believes that this technique (which we owe to Krause) is quite essential if we accomplish the removal of the ganglion.

5. Effect of operation on the ganglion upon the cornea. The author had no trouble in his first four cases. In the fifth case a corneal ulcer formed shortly after the operation, notwithstanding precautions. In the sixth case he stitched the lids together to prevent opening of the eye; after four days the stitches were removed, and in twenty-four hours a corneal ulcer developed. The question is raised as to whether or not the complete removal or complete destruction of the ganglion does not needlessly imperil the eyes, and the author leans quite strongly to that opinion, notwithstanding the experimental work of Turner and V. Hippel, which he quotes.

6. Results as to recovery and cure: Krause reports 22 cases done after Rose's method, with a mortality of four, or 18 per cent. In 51 operations by the Hartley-Krause method, the mortality has been five, or 9.8 per cent. The results are far more permanent than the peripheral operations. Only three recurrences have been reported, all of which were only partial.—*Am. Med. Surg. Bulletin*.

SUBCUTANEOUS INJECTIONS OF SUBLIMATE AS CURE FOR CEREBRO-SPINAL MENINGITIS.—An Italian, Dr. Dazio, suggested this treatment, and with it Dr. Consalvi, of Casoli, has recently treated successfully nine cases occurring in an epidemic of influenza. *Sem. Med.*, January 15, 1896. The quantity of sublimate injected varied from .005 millig. to .01 centig., according to age of patients, which were from fourteen months to nineteen years. He made at first one injection in twenty-four hours, and later one in forty-eight. One case alone proved fatal, a girl of seven died after first showing temporary improvement after injection. In other cases vomiting ceased after second injection, followed by disappearance of other symptoms, except the muscular rigidity. This persisted until after the sixth to eighth injection in some cases. The injections restricted the disease to a moderate intermittent fever with slight headache. The sublimate produced no disturbance except in two cases, one a girl of fourteen had a slight attack of mercurial stomatitis after tenth injection, and another girl of seven a bloody diarrhea after the fifth, but both soon passed away. Besides the sublimate, Dr. Consalvi used leeches, ice, frequent purgations with calomel, and bromid or morphin to quiet the patient. As recovery progressed he gave them iodid of potassium to expel the mercury from the system and favor the absorption of the meningitic exudations.

NERVE SUTURE AND NEUROLYSIS.—A. Wölfler (Prag. Med. Woch., 1895, Nos. 47 and 48; *Contrib. f. Chir.*, February 22, 1896, advocates suturing in cases of paralysis due to division of a nerve, no matter whether the injury is recent or of several years' standing. It is of the greatest importance, he says, to place the sutured nerve under conditions as nearly as possible physiological by freeing it from cicatricial bands and distortions; furthermore, every effort should be made to secure union by first intention. The commonest occasion for neurolysis, or the operation of freeing a nerve from adhesions, he has found after fractures of the humerus. The first symptoms of such adhesions are neuralgia and sensory irritation; subsequently muscular atrophy and disturbances of the nutrition of the skin occur; finally, motor affections and impaired sensibility follow. In the treatment of these cases, conservative measures should be tried at first, especially the use of electricity; if they fail, neurolysis is indicated.

He gives the following table of his results:

A. Suture of Nerves.

1. Immediate Suture (direct union).

a. Primary

1. The facial nerve, after injury. Perfect recovery.
2. The median and radial nerves. Perfect recovery.

b. Secondary.

3. The median nerve. Complete recovery.
4. The radial nerve. Complicated fracture. Resection. Recovery.
5. The fifth and sixth nerves of the cervical plexus. Immediate recovery.

II. Mediate Suture (indirect).

6. The radial nerve. Formation of constricting bands. Final result unknown.
7. The peroneal nerve. Nerve-grafting. The same.

B. Neurolysis.

8. The peroneal nerve, after osteotomy. Recovery which has persisted for seven years.
9. The radial nerve fracture. Recovery.
10. The radial nerve. Exostosis. The same.

—N. Y. Medical Journal.

TENDON TRANSPLANTATION IN INFANTILE PARALYSIS.—Parrish, (N. Y.) *Med. Jour.*, October 8, 1892, describes a method he devised of suturing live tendons to those of paralyzed muscles, and so regaining lost function. He had sutured the healthy extensor-pollicis tendon to the paralyzed tibialis-anticus tendon to remedy a case of valgus.

Goldthwait (Bost. Med. and Surg. Jour., Vol. CXXXIII, No. 18), said he had operated upon four cases with this object. In one case, fully reported, of marked calcaneo-valgus, the posterior muscles were all paralyzed, with the exception of the peroneus longus and brevis, and the tendons of these muscles were displaced forward so as to rest on the outer surface of the malleolus. In this position their contraction caused extreme valgus and slight flexion at the ankle, instead of extension, as is normal. An oblique incision four inches long was made so that it crossed the tendo Achillis about one inch above its insertion into the os calcis. Through this wound the peroneal tendons were exposed and divided at about the lower edge of the malleolus. The tendo Achillis was then freed, and the tendon of the peroneus brevis passed under this and attached to the tendon of the flexor longus pollicis. The tendon of the peroneus longus was then attached to the tendo Achillis, after which the wound was closed, and a plaster-of-paris bandage applied, holding the foot extended. One month later a valgus plate was applied, and this has been worn since.

The method of attaching the tendons to each other is of great importance, and unless they are firmly joined the benefit of the operation is lost. The tendon to which the attachment is to be made is split, and the end of the severed tendon, after it has been scored, is drawn through this slit, and securely held by two quilted sutures, which are so placed that when tightened the outer tendon is spread out, furnishing a broad surface for union. The valgus has largely been corrected, and what remains is controlled by the plate, so that the tread of the foot in walking is quite normal.

Milliken (Med. Rec., No. 1303, p. 581) records a case in which he successfully grafted a part of the tendon of the healthy extensor proprius pollicis into that of the tibialis anticus, which was paralyzed. In this case his object was to preserve the use of both the muscles. He has also suggested grafting the sartorius into a paralyzed quadriceps femoris to regain extension at the knee.—Am. Med. Surgical Bulletin.

SALICYLATE OF SODIUM AND URIC ACID.—Bohland (Centralbl. f. inn. Med., January 18, 1896) has investigated the action of sodic salicylate upon the excretion of uric acid. It would appear, according to the researches of some authorities, that this drug produces an increased excretion of uric acid only when there is an increased production of this body. Thus it is necessary to control the production of uric acid in such investigations. According to Horbaczewski, uric acid is the metabolic product of nuclein, which latter is chiefly derived from the white blood cells. The author's investigations with Hecken were carried out upon two healthy men. They found that sodic salicylate considerably increased

the excretion of uric acid, but that the number of leucocytes was also greatly increased. Thus, medium doses of salicylates produce a distinct increase in the white blood cells, and, if Horbaczewski's theory is correct, a considerable leucolysis, and through this latter an augmented uric acid excretion. Sodid salicylate has been recommended in gout, but in a number of cases it has been found useless. Some authorities, while admitting that it is of no service in cutting short the attack, yet look upon it as a valuable analgesic in gout. According to the above experimental evidence, it is hardly to be expected that the salicylates should be of use in gout, and the author believes that they should not be used even as analgesics either in gout or in the uric acid diathesis.—Br. Med. Journal.

SURGICAL TREATMENT OF SUPPURATIVE DISEASE OF THE APPENDAGES.—Dr. William M. Polk, of New York, thus concisely summarizes a valuable paper in the *American Gyn. and Obstet. Journal* for January:

1. In acute inflammation, with implication of the cul-de-sac, incise and drain.

2. In unilateral suppuration, tubercular inflammation excepted, treat the uterus, and remove the diseased appendages by the vagina—*anterior colpotomy*.

3. In double suppuration: Vaginal hysterectomy with enucleation and removal of the purulent appendages—the so-called *pus sacs*.

4. In suppurative disease, whether double or single, if the patient is too weak to stand the radical operation, evacuate the pus and drain, reserving the radical operation, for the future. Choose the route (vaginal or abdominal) which the pus seems disposed to select.

5. In broad-ligament abscess—a matter to be determined by a vaginal exploratory section, if necessary—evacuate by approaching the pus through the utero-vesical region, or beneath the peritoneum along the route of the round ligament.

6. In suppurative disease don't do abdominal section, but, if you should, do not leave the uterus or the cervix.

THE MICRO-ORGANISM OF MEASLES.—Joseph Czajkowski (*Centralbl. für Bakt. und Parasit.*, 1895, No. 17-18, 511) contributes a further addition to our knowledge of the bacillus which he previously described as existing in the blood in measles. The bacilli in the blood vary in length from one-half micromillimeter to the diameter of a red blood-corpuscle, and in cultures grow into long threads. They stain well with all the anilin dyes, and in the longer forms a part of the protoplasm often remains unstained. They lose their stain by Gram's method. They grow best in bouillon or sterile serous fluid from the abdominal cavity, in which a whitish, fairly heavy sediment is formed, which in older cultures becomes

yellowish-gray. The cultures have no characteristic odor. Rabbits were always immune to the bacteria. Mice died from septicemia three to four days after inoculation with small quantities of the culture, the bacilli being obtained again in pure cultures from the liver and spleen.

The author believes the baciullus described by him to be the specific cause of measles.—Medicine.



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ANTI-VIVISECTION AGITATION.

In our last issue we gave some of the details in regard to the vivisection question as they were presented at the national capital. We did not have at that time either the space or the opportunity to do more than present the specifications of the bill, with some of the details in regard to its presentation. As can be seen by a reference to that place, the profession was ably represented, but it is to be remembered that the opponents of experimentation upon animals are exceedingly aggressive in their efforts to absolutely block the wheels of progress in this direction, and that it is, therefore, the more incumbent upon each and every member of the profession which, above all others, owes to vivisection so many of its life-saving means, to endeavor by every means known to educate the public up to the work being done by our physiologists and by our teachers in medicine, in order that we may offer an intelligent obstacle to their further progress. To the scientific man it would seem hardly necessary to do more than present the simple facts in connection with the matter; indeed, that a single valuable human life has been saved at the cost of many animal lives, would appeal very strongly to an individual whose life was at stake.

To begin with, it is hardly necessary to answer the charges of cruelty, as the public knows too well the impulses, the motives, the desires which actuate professional men in their work. The relief of suffering is one of the special aims in the practice of medicine, and while often in the case of human beings it may be necessary at times to inflict more or less pain in order to bring about in the end a beneficent result, the aim has never been lost sight of, nor has the patient ever given up the hope of relief. In the case of animals we do not believe for an instant that any medical man is as ready to inflict pain as the ordinary representative of any one of the societies which is pushing this legislation; and the experimenter is probably more familiar than any one else with the various means to arrive at satisfactory results with the least degree of suffering on the part of the animal. As a matter of fact, it is hardly worth while to review this and the similar features which are so well known to medical men; but it is necessary for the progress of science, for the advancement of learning in medicine, we repeat, it is absolutely necessary for the medical profession to be allowed to be the judges in this matter. The cessation of experimentation upon animals would be a calamity to progressive medicine. The passage of a bill by Congress for the District of Columbia would encourage, if it did not justify, the passage of a similar bill in the various States; and it is, accordingly, a matter of the greatest moment to medical science, and one to which we cannot too strongly call the attention of medical men.

MEDICAL EDUCATION.

Upon the threshold of a new year in medical teaching, it would seem not out of place to offer a few suggestions to those who may be in a position to influence some of the young men about to enter upon the study of medical science. The day has long since passed when the only prerequisite to the study of medicine was the haphazard selection by exclusion of such a profession. With a fair degree of unanimity the colleges all require a preliminary education, and every year these requirements are being brought to a higher standard. Just here we may say that the loss to the man is greater in many cases than the loss to the profession, when the study of medicine is entered upon without the general knowledge which should precede the study of any learned profession. Of all professions, medicine offers the most opportunities for the display and for the distribution of general information; on the other hand, it offers quite as large a field for the display of ignorance in these matters. Over and above the ordinary school education, it seems to us that every young man who proposes or hopes to accomplish anything in medicine ought to have several years of collegiate work. We would not

exclude necessarily every one who had not either the money or the opportunity for such preliminary work, but we would say that there ought to be exceedingly strong reasons for waiving such a requirement.

Of the many schools devoted to the work of teaching medicine itself, each has its peculiar claim upon the individual who proposes to patronize it. A school which would be peculiarly appropriate to one student might be quite as inappropriate to another. A course in medicine might in itself be ideal, and yet, considered from a practical standpoint, an absolute failure. We believe that one failing peculiar to many systems of teaching is in not bringing about in the student a method of self-dependence, of personal investigation, of personal reflection, all of which are so necessary to a good understanding of any subject. No college can teach the individual all that it is necessary for him to know in the practice of his profession, but every college can teach the student how to think for himself, how to act for himself, how to study for himself, where and how to get the information necessary to the best results in his profession, provided, of course, the individual in question be sufficiently in earnest to accept the means. The colleges in which a theoretical course for at least one or two years dominates the method of teaching, has many special advantages which even abundant clinical facilities do not outstrip. As a matter of fact, it is often the very wealth of clinics that impedes the thorough underlying study necessary to their proper appreciation. With all the perversity of human kind, and hence not unexpectedly, the student will pursue clinical teaching for an unlimited time and over considerable distances, without once giving a thought to the fact that he is not at all able to appreciate the teaching he there hears and sees. On the other hand, where a thorough theoretical foundation has been laid, the advantages from clinical opportunities are of the greatest moment. How far the one idea or the other is to be carried in medical education, is a question which is frequently not easy of solution; but we have always regarded the thorough theoretical teaching, followed later by extensive clinical teaching, as being the ideal method of preparing a young man for practical work in medicine.

REVIEWS.

The Multum in Parvo Reference and Dose Book. By C. Henri Leonard, M.A., M.D., Professor of the Medical and Surgical Diseases of Women, Detroit College of Medicine. Flexible leather, 143 pages, price 75 cents. Detroit, 1896. The Illustrated Medical Journal Co., Publishers.

This is a recent edition of the Dose Book, of which the title page informs us some forty thousand copies have been issued. The present edition is printed on very thin paper, and is bound in red leather, round corners, so as to make it specially light and handy for the pocket; the weight is not two and a half ounces. Besides the doses of some 3,500 preparations being given, it has numerous tables, such as the solubility of chemicals, pronunciation of medical proper names, poisons and their antidotes, incompatibles, tests for urinary deposits, abbreviations, table of fees, etc. It will be found a handy pocket companion.

A Treatise on Appendicitis, by John B. Deaver, M. D., Surgeon to the German Hospital, Philadelphia; containing 32 full page plates and other illustrations. Philadelphia, P. Blakiston, Son & Co., 10 and 12 Walnut street., 1896. Cloth \$3.50.

The subject of appendicitis has been so frequently in the medical mind and before the medical eye in the last few years, that it is not surprising to see several treatises devoted to this subject alone. The present volume is the more valuable in that it is the result of the personal experience of the author in many hundred cases. The illustrations are excellent, the text is clear and full, and we do not know of any source at present available in which such information can be obtained in regard to this disease. The two questions after diagnosis which are of special importance to the practitioner are, first of all, the question of operation, and then of prognosis; or, we might perhaps better say, first of all the prognosis, which, the author says, "will depend more upon the form of treatment instituted at the outset than upon any other factor," and then the question of treatment. The author says, "Why the prognosis is unfavorable in the cases under treatment by operation, is plainly seen by reference to the pages on the pathology of the disease. It is impossible to foretell what will be the outcome of any attack. As far as general health is concerned, I believe that an unfavorable prognosis must be given to all those cases of apparent recovery in which appendicial inflammation has become chronic." Of course, we look to such a work for guidance as to when it is necessary to interfere. We must confess that we cannot take the author severely to task for being rather in favor of operative interference in every case which does not yield rapidly and satisfactorily to exceedingly simple measures. Of course, the prognosis in operative cases will depend upon the conditions we find at the time of operation; and, while the operation itself is comparatively simple in many cases, there are many more in which the most exact skill and experience is required of the surgeon. The technique of the operation is given in this volume in great detail, besides being beautifully illustrated. We do not hesitate to subscribe our approval of this excellent and timely work.

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ORIGINAL ARTICLES.

SURGICAL IMMUNIZATION COMPARED WITH SUSCEPTIBILITY AND PREDISPOSITION TO INFECTION.*

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The term surgical immunization refers to that change in a part or the whole of the organism by which there is conferred an exemption, to a greater or less degree, from the consequence of any surgical procedure. This may come about without any therapeutic agency whatever, and may be the result of ordinary or normal development of the organization. On the other hand changes may ensue from pathological processes of various kinds which shall have a protective influence against any untoward influence from surgical interference; and inflammation may prove a safeguard subsequently against injury.

In the paper which it was my privilege to read before this society last year, I dwelt upon the practical features of pyæmia and septicæmia; and the consideration of immunity and susceptibility on this occasion may serve as an explanation of some obscure points in my former contribution.

It must be apparent that the most essential conditions for comprehending surgical pathology are embodied in the reciprocal relations of immunity and susceptibility, so that I can not present to your society a subject of more importance to the surgeon and general practitioner than that selected for our consideration at present. The members of this medical society are requested to favor me with their attention and to analyze the data, so as to discuss the various points of prin-

* Read before the Medical Society of Virginia, September 10, 1896, at Rock-bridge Alum Springs.

ciple and practice which are involved in my paper. The outcome of a thorough discussion of these matters must promote the adoption of conservative measures in surgery, and I am pleased to repeat the words of the editor of the *Virginia Semi-Monthly*, that "headstrong empiricism in surgery is the thing which is fast bringing that great science and art into discredit."

Elaborate papers upon immunity and susceptibility, with special reference to surgical cases, were presented by Dr. Roswell Park and Dr. Joseph Ransohoff at the meeting of the American Surgical Association, in May, 1896, at Detroit.

The conclusions of surgical importance reached by the former imply that "the surgeon in emergency cases has to do the best he can, not merely with the means at hand, but with the tissues at hand. When time may be afforded it is the surgeon's bounden duty to so order the habits, the diet, the surroundings, and the preparation of his patient, as to restore his tissues and vital fluids, so far as possible, to their normal condition, before he interferes with their functions by an operation." Since the inauguration of the so-called antiseptic era, Dr. Park contends that in our enthusiasm for combating infection from without, we have lost sight of, and, to a great extent neglected, a most important truth, which we can not afford to disregard, by not preventing infection from within. In this connection Dr. Ransohoff states that the extent to which we are in position to influence this entero-sepsis affects the surgeon less than it does the general practitioner. It is exceedingly doubtful whether, by any safe medication known, the intestinal canal can be made aseptic. "Nevertheless," he says, "no major operation should be undertaken, if time permits, without careful attention to this most important of emunctories.

He claims that the position of a trauma or operation very signally influences the susceptibility to surgical infection. It is alleged by him that parts freely supplied with arterial blood and from which, by many channels, the return circulation is insured, do not easily become the sites of the hypostatic hyperæmias, which are often the immediate precursors of surgical infections.

A very important point of view, in consideration of the question of susceptibility and immunity to surgical infection, is that of operative infection. With a proper comprehension of the dangers of such infection they may be largely avoided, and Ransohoff's motto is *non nocere*.

In my discussion of the papers I noticed some instances of immunity to traumatism conferred by previous inflammatory processes, and drew attention to the results of increased susceptibility to certain forms of inflammatory action from slight superficial injuries. The development of lymphangitis from a slight abrasion involving the minute

ramifications of the nerves and capillaries, was attributed to the ganglionic element which is supplied to the rudimentary structure of the connective tissue.

The peculiar consequences of punctured wounds and small lacerations of the integument, developed in the form of tetanus, are dependent upon ptomaines, and it is very rare to find suppurating wounds followed by tetanus.

There must exist not simply a susceptibility on the part of the general system, but a very marked predisposition to take on an impression from a local injury, where lymphangitis or tetanus is developed in such lesions.

Under different conditions, it is found that pyæmia and septicæmia follow traumatism.

A distinction should be recognized between the normal and physiological condition of the nerves and blood-vessels in recent injuries, as compared with the abnormal and pathological state, resulting from inflammation or other structural disorder of any portion of the organism. A proper discrimination between these results of violence and disease forms the basis of treatment for the different stages of wounds. A primary dressing is made with a view to the prevention of trouble beyond that of traumatism; the secondary measures may require a consideration of the changes in the tissues, and the consequent general derangement of the organism, including both the vascular and absorbent systems. All changes in the organism of a secondary character depend on an impression upon the nerve centers from the local injury, which is propagated by the efferent nerves and the ganglionic nerves to the entire organization, constituting what is styled constitutional disturbance. The action and reaction observed between traumatic lesions and constitutional derangement develop a general effect upon the secretions.

To appreciate the changes wrought upon the tissues by inflammatory processes, it becomes necessary to look into the composition of the different textures of the organism. The cellular constituents of muscles, blood-vessels, nerves, serous and mucous membranes, undergo modifications from inflammation, which render these structures less disposed to resent the impression made by a surgical operation, than is observed in normal tissues. How far the presence of microbes and the process of phagocytosis may operate in modifying the condition of the tissues, under the course of inflammation, must be considered in determining upon immunization.

While there is sufficient ground to account for the development of inflammation in some cases without tracing it to bacterial origin, and perhaps in other instances the bacteria, may be a concomitant rather than a cause of inflammation, yet the experimental results go to

prove that in some manner not very well defined changes take place, by which ptomaines are produced in connection with leucomaines.

As a counterpart to the agencies of immunization it devolves upon us to study the modification of susceptibility and predisposition to infection. I employ the word infection in its ordinary signification, as the invasion of a wound by septic germs, such as interfere with the normal progress of healing or induce suppuration. In Foster's Encyclopedic Medical Dictionary it is defined as "the act or process by which disease is set up in an organism, by the implantation of morbid germs from without; or of a part of the organism, by the conveyance of such germs from another part." The advanced bacterial school may consider this term "germs," as entirely too general in this day of exact designation of diseases by their appropriate bacilli, but for the purpose of understanding the relations of these different modifications of the organism, it is not requisite to go into minute details.

I make the distinction between susceptibility and predisposition as passive and active conditions, demanding, respectively, greater or less force to produce an effect. The observance of hygienic precautions in all respects affords the best protection against diseases, and in like manner the avoidance of all vicious habits, which may impair the powers of the organism, places the body in the most favorable condition to resist the depressing influence of surgical operations.

It is becoming recognized generally by the profession that immunization from tuberculosis results largely from the environment of the individual, and that in its incipient stage restoration of vigor, by open air life and exercise, accomplishes a cure in some cases. Quite a change has come over the surgical practice in local tubercular developments, and while the progress of the disease in a particular part may be arrested by operative measures, the tubercular diathesis must be corrected by general treatment. The predisposition to tuberculosis can not be relieved by a surgical operation upon the diseased structures, but must be corrected by remedial agencies acting through the absorbent and secretory organs.

The general belief that experimentation upon inferior animals in their normal condition of health may be relied on as a guide in performing surgical operations upon the human being, does not take into the account an important factor connected with the pathological condition of the structures. There may exist such modifications from acute inflammatory processes as to preclude an operation, or there may be present results of chronic inflammation of the tissues which shall prove advantageous by securing tolerance of surgical interference. The robust, athletic subject, with strong proclivities to hyperæmia,

meets with an accident while enjoying perfect health, which interferes materially with the vital functions, and the local injuries call for operative measures at once. It is evident that a patient under such circumstances will not bear a surgical procedure so well as one who has become accustomed to the wear and tear of a slow inflammatory process which prepares the tissues for a resort to the knife.

Ashhurst states that "if the intermediate or inflammatory stage has come on, operative interference must, if possible, be postponed until the inflammation has measurably subsided, and until the patient's condition has become assimilated to that of a case of chronic disease rather than of traumatic lesion."

It is true, however, that secondary amputations give a somewhat greater fatality than primary amputations, being 45.5 per cent. of mortality in the latter, with 32.3 per cent. of mortality in the former, out of 2,755 cases tabulated from twenty-one different reports prior to the days of antiseptic surgery.

The general results, given in the supplement to the International Encyclopedia of Surgery, from amputation at all stages, in the practice of Ashhurst in 253 cases, is 26.4 per cent. of mortality.

The statistics of cases in which amputation has been done for diseases show a mortality of 26.8 per cent., while those for injury reach 39.8 per cent. of mortality.

There is a peculiar feature of nervous depression, known familiarly as shock, which results from surgical operations, not otherwise of a serious nature. In undertaking any operative measure it is prudent to forestall a tendency to this form of vital prostration by imparting tone to the nerve centers, and various medicaments have been resorted to before entering upon operations, with a view to prevent shock, while similar agencies have been used to restore patients from the threatened collapse attending cases of profound shock.

As prophylaxis is far preferable to therapeusis, it of course is very desirable to anticipate the trouble and prevent it if possible, and the most satisfactory proceeding is to keep the patient for some hours, or even days, when practicable, under the sustaining influence of strychnine by hypodermatic injections of the $\frac{1}{30}$ gr. at such intervals as may be convenient. Within an hour of the time for an operation a whiskey or brandy toddy may be given, and in half an hour, inject sul. morphia $\frac{1}{4}$ gr., and sul. atropia $\frac{1}{150}$ gr., followed by A. C. E. anæsthetic.

It is very desirable that the profession shall discover some means of averting the fatal consequences which occasionally follow the administration of anæsthetics.

Until the precise lethal operations of the inhalation of sulphuric ether and chloroform are understood we can not proceed philosophically,

towards providing a remedy. But I am favorably impressed with the use of oxygen in view of the change which the arterial blood undergoes in the collapse of anæsthesia corresponding to that of asphyxia. The dark color of the arterial blood under anæsthesia struck me forcibly upon first using it shortly after it was introduced by Simpson, and yet there has been little notice taken of the absence of oxygenation of the blood under anæsthesia. It seems rational to inhale oxygen or force it into the lungs when a patient becomes comatose from asphyxia, but the effects of anæsthesia collapse are so sudden as to afford little opportunity to apply the remedy, even when it is already at hand.

The supposition that immunity resulted from local applications to the field of operation led to the use of antiseptic dressings with a view to prevent contamination. But further observation convinced operators that no favorable influence was exerted by germicidal washes upon normal structures, and that the only indication for antiseptic applications is to combat existing septic conditions.

A very interesting illustration of the effect of the development of modern surgery is given by Henggeler in 276 cases of strangulated hernia at Zurich from 1881 to 1894. During the period of the use of carbolic acid as an antiseptic, i. e., from 1881 to 1885, 38.15 per cent. of the cases died; during that of bichloride, i. e., from 1885 to 1893, 21.1 per cent. died, and since the introduction of aseptic methods only 16.3 per cent. have died.*

In 48.4 per cent. of the 64 fatal cases, the cause of death was gangrene of the intestines and peritonitis, but there is nothing said as to the influence of antiseptics in producing these troubles. It is the accepted doctrine now that asepsis secures greater immunity from contamination than antiseptics in surgical operations upon structures in their healthy physiological state, and few operators follow the practice of five years ago by resorting to germicidal applications to fresh cut surfaces.

I occupy the same position which has been held by me during all the vicissitudes of the war against germs, and the most advanced views of bacteriologists are exactly in unison with the doctrine I have advocated from the outset of this controversy. It has not been a tacit acquiescence in what was maintained by others, in regard to the hurtfulness of all germicidal applications upon fresh cut surfaces, but at all times and in opposition to the tenets of colleagues with whom my lot was cast, I have openly spoken out my convictions as to the injurious effects of carbolic acid and the bichloride of mercury solution in connection with operations on normal structures, and that they were only admissible in septic conditions.

* *Annals of Surgery*, July, 1896.

There is a phase of septic development to which potent germicides are applicable, and when a local source of contamination exists, whether it is associated with bacteria, fungi or ptomaines, the most vigorous use of antiseptic measures is demanded. It is evident that septic processes, which uncontrolled would lead to septicæmia, are arrested in many instances by correctives of various kinds, and a prompt resort to antiseptics and germicides is indicated to arrest the progressive contamination of the general organization from the local septic process.

A normal, healthy structure does not call for the application of germicides, but when the tissues have undergone contamination, antiseptic applications are requisite, and it is held by some strenuous opponents of poisonous drugs that innocuous agents may be employed as antiseptics with a satisfactory result. Yet it is the practice still with some members of the profession to employ solutions of carbolic acid and corrosive sublimate upon delicate tissues without regard to the serious results of their absorption.

In my address at the opening of the Southern Medical College in October, 1888, upon aseptic, antiseptic and septic surgery, all the practical appliances of a surgical order were embraced under these divisions. The first embodies all those means which come under the heading of prophylaxis, and looks to the avoidance of hurtful agencies, so as to be assured that if a measure does no good it shall do no harm. It is the highest type of conservatism to preserve the organs or tissues involved in an operation against any kind of mutilation or injurious impression from other sources.

Whatever may cause impairment or disability of the constituent elements of a part, whether in the influence of a disease upon the tissues or from the effects of a surgical operation with the accompanying local applications, should be discounted from the result. The true aim and end of surgery being to preserve and not destroy a part which may be diseased or injured, all the processes of asepsis that look to its restoration are of the greatest importance to the surgeon, and commend themselves to his adoption under all circumstances.

Antiseptic applications in surgery differ materially in their aim and results from aseptic measures. The hypothesis of the bacterial origin of inflammatory processes, with suppuration and degeneration of structures after injuries, has led the medical philosopher and scientist to search for the separate germs of the various disintegrating processes, and to point out the special microbe of distinct diseases. That we find micrococci, spirilli, spores, fungi and ptomaines associated with certain disorders of the animal economy, indicates that they have a share in their development, but whether the evidence of their presence warrants

a resort in advance to germicides, has now received an adverse decision by bacteriologists.

The sphere of antiseptics as now recognized is to correct a tendency to or a development of degeneration and disintegration of living structures, resulting from contamination in any form. If we are able to discover the causative element and neutralize it by antiseptic measures of a topical or a constitutional nature, this is eminently proper.

But in default of identification of the cause, it devolves upon us to combat the injurious effects of the vicious impression already made upon the organism, and this is the special province of antiseptic surgery, instead of seeking to anticipate trouble by the use of germicides.

The claim, as put forth formerly for antiseptic surgery, included many measures supposed to be preventive, which proved to be disturbing influences, so that instead of protecting the organization, by immunization, they produced derangement of the system and led to septic developments. Having the courage of my convictions based upon investigation of this subject, I have protested against a blind acquiescence in what has been erroneously styled antiseptic surgery, and it gives me great satisfaction to know that my position is sustained by the best men in the profession at the present time.

The cases of poisoning resulting from even the most cautious use of carbolic acid and bichloride solutions call for their abandonment in surgery. It is this class of agents which I have placed under the division of septic surgery, instead of antiseptic surgery.

The point is settled beyond controversy that they are potent germicides, but in the race after micro-organism, more damage was done to the structures in which they are supposed to be located than the microbe is capable of doing if let alone. The great dangers from the contact of solutions of carbolic acid and corrosive sublimate with recently cut surfaces are now so well known to the profession throughout the world, that it is unnecessary to specify instances to any reader of current literature. We feel, therefore, that surgeons who continue to employ solutions of these poisonous drugs are without a shadow of excuse, and should realize that they are not practising true antiseptic surgery, but septic surgery. The consideration should come home to them that asepsis has taken precedence in surgery involving normal structures.

There has cropped out recently, in a meeting of railway surgeons, some views indicating that there is something calling for antiseptic surgery in the treatment of railway accidents which does not exist in the case of other injuries. Why lacerated and contused wounds received in a collision or in any other manner connected with a railway should differ from a similar injury inflicted under other conditions is quite incomprehensible. The great point made that the difficulties in the way

of practising asepsis renders it important to adopt antiseptic measures, preliminary to carrying out aseptic treatment, does not avail against the claim of bacteriologists of good standing, demonstrating that the use of germicides in uncontaminated structures proves generally injurious to the tissues.

It looks like that sophistry which would do evil that good may come, and I am at a loss to understand a plea for this line of treatment in railway surgery.

There has been such a variety of injuries from accidents in riding bicycles, that in this class of wounds, as in those connected with railway service, there are supposed to be some features by which they are to be contra-distinguished from other lesions of the tissues. A writer in the *British Medical Journal* of July 25, 1896, states that "the cycle graze is very troublesome to heal. The two upper layers of the skin over some bony prominence are killed by the blow from the fall, and the resulting sore, if neglected, often remains open for weeks." Other comments are made upon the distinctive character of the wound, but the author admits that the injuries sustained from cycle accidents do not differ in any essential particular from those caused by other falls from swiftly moving carriages. We may anticipate that the day is not far distant when we shall have cycle doctors and baseball doctors set apart for special work in each of these departments.

It is prudent policy to rely upon the *vis medicatrix naturæ* to a large extent in the management of violent traumatic accidents, and there is a masterly inactivity which avails much toward the restoration of structures that have been seriously injured, without material impairment of vitality.

The province of asepsis in such cases is proper adjustment of the structures and the prevention of everything likely to interrupt the curative process. It is doubtful if anything is better than the blood plaster from the saturation of a roller around a fresh cut on either the hand or foot. The parts are in their normal state, with a good prospect of healing if let alone, so that meddlesome surgery can only interfere with the curative process, and "hands off" is the true policy in this class of cases. With the lights before us and the resources at our command, the surgeon is warranted in undertaking to save limbs, which under the old régime were necessarily sacrificed. But we should not try to save a dead member; it being our duty to lop off what can not be restored to life.

Asepsis is the prevention of all contamination from within or without, in the treatment of wounds, and the most extensive traumatism may yield a good result with the proper use of aseptic measures. Among aseptic resources the most important then is cleanliness, which

John Wesley declares to be next to godliness. The idea conveyed by freedom from dirt or filth applies not alone to the absence of any foul or extraneous matters from the wound, but its complete removal from the surroundings of the apartment. Of course the clothing and bedding of the patient should be free from blot or stain or any such thing.

Yet, withal, it has been questioned whether those who have been accustomed to live in the midst of filth can be entirely removed from such surroundings without a protest of nature against such a revolutionary measure. It is even held by some gynecologists that women whose houses are not models of hygienic requirements, bear up under a laparotomy at their own quarters better than in the best regulated hospital.

My personal experience in undertaking the management of cases requiring extensive incisions for the removal of large ovarian tumors in private quarters has been entirely satisfactory, and I doubt the advantages claimed by some operators for hospital surroundings in laparotomy. One of the gynecological staff at the Grady Hospital remarked in my presence on one occasion, that his results in abdominal surgery of females had been more favorable in those cases operated upon at their homes, however humble, than in the hospital. I have not at hand the statistics of the gynecological work in the Grady Hospital, but the general impression of the profession in Atlanta is, that there is a much larger mortality in laparotomies done there than in the same kind of operations in private practice. The most feasible explanation of the increased mortality in hospital practice is the comparative immunity confirmed by observing more or less, the habits of life to which the patient has become accustomed.

I witnessed a striking illustration of the effect of habit, a few years since, in a lady of sixty years of age, upon whom I operated for the removal of an immense cystic tumor of the ovary. Everything progressed well for a day or two after the operation, when the patient's listless and depressed condition attracted the attention of all around her, and, upon inquiry, at last it cropped out that she had given up her habit of using snuff since the operation, of her own accord. Dr. G. G. Roy, being the family physician, was assisting in the case and after treatment of the patient, and directed her at once to resume the use of her snuff. Within twenty-four hours afterwards our patient had undergone a most favorable change, and continued to improve without any further drawback until completely restored to health.

There is no doubt, also, in regard to the use of spirituous liquors habitually by those who undergo surgical operations, and that a sudden interruption of this indulgence lays the patient liable to disturbances of various kinds.

On the contrary, it is well understood that those who have been excessive drinkers of ardent spirits have their vitality so much impaired by its effects upon the organism that they do not resist the shock to the general system from operation so well as others who have led lives of abstinence. The immunity of habit avails for those who have indulged moderately in the use of intoxicants, and a modified use after surgical operations is indicated. But this even gives no security corresponding to the immunization of a vigorous normal state of the organization, such as is found in perfect health and proper performance of all the functions of the body.

The law of habit comes into play still more distinctly in those who are victims of the use of opium to an extent that their nerve centers are very materially affected by it. In all such it may be laid down as a rule, for the guidance of the surgeon, that the habit must be respected, by its use for a time after operations are performed.

As a corollary to this presentation of the claims of immunization as related to susceptibility to infection, the following inferences may be drawn:

1. That various agencies are at work in rendering the human organism to a greater or less extent free from the injurious impressions of surgical procedure.

2. That local and constitutional influences operate in conferring immunity, and the environments of individuals, with their habits and customs of life exert great control over the vital powers.

3. Certain marked changes in the conditions of the nervous system, constituting shock, in course of surgical operations, may be averted by proper measures in advance, and in default of such precautions should be corrected by vigorous means of treatment.

4. That the immunity for normal structures in operative work, which was supposed to be given by germicidal solutions, has proved to be a delusion and a snare, and that they are only admissible in septic contamination of the tissues.

5. That a preliminary examination of all the functions of vital organs should precede surgical operations of every kind, and that efficient correctives should be resorted to for their derangements. The issue of the case depends materially upon proper means of preparation for an operation.

6. It is not essential for the management of a surgical case that the patient be placed in a hospital, but cleanliness in private quarters, with proper nursing, may secure entirely satisfactory results, by conforming to the ordinary surroundings of the patient.

7. A thorough comprehension of the reciprocal relations of immunity and susceptibility should lead to the adoption of conservative meas-

ures in the practice of general surgery, and the use of the most radical and aggressive measures when indicated by the nature of the case.

8. Those appliances which may promote surgical immunization should be adopted, and those means which lessen susceptibility and predisposition to infection are warranted in all cases of surgical interference.

SOME OF THE UNSUSPECTED EFFECTS OF THE BROMIDES.*

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Regarding the effects of the bromides on the system in large or continued doses, not a little difference of opinion has existed. Ordinarily these salts are considered by the profession as harmless in their constitutional effects, and the limitation of the dose, or the duration of their exhibition, is gauged only by the idiosyncrasies of the patient, or the personally conceived demands of his own nervous condition. The usual carelessness of the physician in this respect is as reprehensible and dangerous, in my opinion, as the recklessness with which the patient becomes accustomed consequently to use these drugs for every supposed nervous manifestation. In small and interrupted dosage, the bromides are calmative and effective remedies, and, in the great majority of patients, act as a moderate sedative to the nervous functions generally, without any obvious ill effects.

This fact often causes their indiscriminate and continuous use, and subsequently there supervene certain physiological effects which are attributed in many instances to the disease under treatment, as one of its manifestations, instead of to the agents which are being used to combat it. This is manifestly true in those cases where large doses have been given, and I think in those cases as well where small doses have been continued for a long period, the ultimate constitutional effects, of course, being the same. If these latent and commonly overlooked effects, which I shall mention, were always as patent as the bromism, which eventually comes on after long-continued employ of these salts, thus showing resentment at their farther ingestion, it would be needless to direct attention to them.

But such is not the case. On the other hand, many of the physiological effects are masked and obscured by other temporarily existing conditions. Originally, and even as late as 1870, the bromides, and especially the bromide of potassium, was considered an alterative and deobstruent, (1) and analogous to the preparations of iodine. It was proved experimentally, however, a few years later, that they were nervous

* Read before the Richmond Academy of Medicine and Surgery, August 25, 1896

sedatives, and, specifically, cerebral sedatives, and no clinical fact is more conspicuously verified than of their efficacy in these and allied pathological conditions. Their ultimate effect on the system, however, is yet a *quæstio vexata*; some authorities maintaining that since some patients have taken them largely and continued them for a long time without injurious result, or, indeed, any very striking result of any kind, that they are consequently harmless, while other experimenters, on the contrary, have found them, even in moderate doses, to exercise powerful influences on the constitution, and in larger doses, or too long continued, to produce peculiar poisonous effects.

Most physicians, I believe, are prone to overlook and disregard the true physiological effects of these medicaments, because they attribute the induced symptoms to the primary neurotic condition of the patient, and in the end are often surprised to find an unaccountable depression of vitality, both physical and mental, that far outweighs the evident control of the nervous symptoms that had been obtained by this treatment.

I am free to admit that such was formerly my experience, having been taught the innocuousness of the bromides, until it was forcibly impressed upon me some years ago by several cases that staggered my credulity, and more recently when that recognized authority, Dr. Weir Mitchell, by his experience of their baleful effects, has enforced the lesson upon me.

As to their toxic effects, the bromide of potassium is recognized as the most powerful, and the bromide of sodium as the least toxic. There is a general correspondence, physiologically, in the action of all the bromides, except that of ammonium, due, doubtless, to its base, and they are all very diffusible, which accounts in some measure for the no more frequent ill effects observed, for it is certain that when administered in large doses no inconsiderable portion escapes absorption, being easily detected in the intestinal mucus, etc. Most persons take the usual doses with no perceptible disadvantages other than acne, roughened skin, etc.; but the prolonged administration develops in all cases that condition of chronic poisoning known as bromism, which differs from the effects of a few medicinal doses in the extent and intensity, but not in character, of the symptoms.

If the bromides are to be continued for any indefinite period, it is difficult to determine what is a safe dose, for it is clinically substantiated by Voison ⁽²⁾ that 60 grains repeated for from three to six times, at intervals, with some persons, will occasion slight nausea and diarrhœa, while Bartholow ⁽³⁾ has ascertained that 100 grains for one dose will lower the temperature in a healthy adult from one-fifth to one-half a degree, the respiration from two to five, and the pulse from ten to twenty beats per minute.

It is some of the unusual, or, at least, not usually suspected, effects of the bromides that I desire to consider in this article; symptoms which, in their milder forms, must be familiar to all practitioners, but which sometimes, I think, are attributed to a mistaken parentage, to the disease and not to the remedy. Among these commonly unsuspected effects may be mentioned the following:

1. Increased irritability of temperament.

It is a notable fact that most patients who have undergone the bromide treatment for any considerable length of time, for nervousness, insomnia, etc., develop an irritable, peevish, and querulous disposition, disproportionate to the exciting cause. This is particularly noticeable in epileptics, and is often assigned as one of the manifestations of the disease itself. This, I am confident, is a mistaken assumption, for, as a clinical fact, attested in many of these cases in my experience, the temporary suspension or withdrawal of the treatment at once moderates and often completely suspends the irritable tendency. In the case of epileptics, also, it is true that this irritability is increased, even though the convulsions be lessened in their severity. Many nurses, even, will bear testimony to this fact.

2. A depression of spirits with a tendency to moderate melancholia.

There are some neurotic cases in which moderate doses of the bromides occasion despondency in the individual, which at times, amounts almost to a melancholia, though this is rare.

In June of last year I was consulted by a lady of a neighboring city, who came to me with the history of grave melancholy. She was intensely depressed, and in constant fear of "losing her mind." She was about 45 years old, and a great sufferer from insomnia. Upon examination, no physical defects were discoverable, and, but for a slightly anæmic condition, she was in fair physical health. Enquiry elicited the fact that, one year before, when suffering from pelvic pain, a mixture of bromides, containing about 80 grains a day, had been prescribed by her physician; and, fearful of a return of the trouble, and to insure sleep, she had almost constantly maintained this treatment ever since. At my solicitation, the treatment was partially suspended, and in two weeks there was marked improvement. At the end of a month, upon the entire cessation of the bromides, there was almost complete restoration to health. Later, with the aid of bitter tonics, she was restored to her normal condition, and up to this date is in perfect health, and has had no return of melancholia.

3. Impairment of memory and also of contractility of muscles.

In nearly all cases, where large or continued doses of these drugs are taken, there is, to a greater or less extent, an impairment of mem-

ory. Weakness of mind, without perversion of intellection, is a very constant result of the continued use of large doses. Failing memory, especially in epileptics who, according to the general routine of practice, take the greatest quantity of bromides, is almost invariably assigned to the disease as the causative factor, but my experience demonstrates that the bromides themselves are, for the most part, responsible for this condition. Dr. Mitchell (*) reports the case of two children, ages 10 and 13 respectively, suffering with mild epilepsy, who, owing to a mistake of the nurse, were given 100 grains a day of lithium bromide for a few days. Memory was impaired in both. One forgot the letters of the alphabet, and the other had some curious confusion as to the time of events, misdating them. This state of altered memory, in both cases, passed away in two days after the bromides were withdrawn. These cases also illustrate that motility is impaired by the bromides, for the same author relates that the physical weakness in both was very marked, and that, while both children could stand, neither could walk. The bromides evidently possess the power to destroy or impair the irritability of the motor and sensory nerves, and the contractility of muscle, and Dr. Rudisch (5) has pointed out that the parietic symptoms first manifest themselves in a tendency to ptosis, and, later, an increasing feebleness of all the limbs, amounting in some instances almost to a hemiplegic condition. While it is not often observed, still several cases are reported where large doses given by mistake, or reckless lay use of the drug, have induced a complete relaxation of the sphincters. A prompt withdrawal of the drug has always restored the functions to their usual offices.

4. Irritant to the gastric mucous membrane.

In small doses, well diluted, the bromides are generally acceptable to the stomach, and by some believed to be positively anæsthetic to the mucous membrane. In large doses, or in continued administration, however, they are distinctively irritant. This point is clinically well established as regards large doses, but it may not be so evident in the case of continued moderate doses, which in effect, however, produce the same results.

Several years ago, a lady consulted me for diarrhœa, and thinking it was of nervous origin I administered the bromide of sodium in 30-grain doses, thrice daily, in conjunction with other treatment. Upon her return, several days later, I found her condition not only not improved, but worse. She informed me that, not having been benefitted by my prescription, she had also taken larger doses of the bromides that she had been accustomed to taking when she felt "out of sorts," along with the medicine I had given her. Learning that it had been her habit to take several doses a day of bromide of potassium for some

months, my suspicions were aroused that that drug, intensified in its irritant effects by the 90 grains daily I had ordered, was to blame for her non-improvement. A suspension of treatment, with rest and boiled milk diet, speedily effected a cure.

5. Bromides act as an aphrodisiac.

Some authors affirm that, if given in large doses, they diminish, and, at length, if long continued, entirely subdue the venereal appetite. M. Puchi⁽⁸⁾ insists that under these conditions the patient will fall into a condition of impotence, which sometimes outlasts the use of the medicine several days. My experience, however, has not confirmed the antaphrodisiac properties of these drugs.

6. They disturb the circulation.

Very obvious effects are produced on the action of the heart when large doses are administered. Bartholow⁽⁹⁾ says that the number of the cardiac pulsations is not only reduced, but their force is diminished, and the tension of the arterial system is lowered. Dr. Da Costa endorses this statement and inveighs against the use of the bromides in those persons having weak hearts, "especially the form of cardiac weakness designated as chronic cardiac asthenia."

7. Extraordinary susceptibility to toxic effects in cases of cerebral lesions, etc.

Several recognized authorities speak of the sudden bromic toxication liable to occur in persons who have suffered cerebral lesions from trauma, or who have had emboli or necrotic processes around clots. Dr. Mitchell⁽⁸⁾ reports a case of rheumatism in a young man who had an embolus in the right middle cerebral artery, and whose condition presented increasing evidences of destructive irritative changes in the brain. To control this, he gave 60 grains of potassium bromide daily for three days. Acute mania was the result, and was not relieved until he ceased the treatment. Surgically, this is an important fact, and should be heeded.

8. Tendency to give rise to homicidal and suicidal impulses.

MM. Rames and Huette⁽⁹⁾ were the first that I can learn to chronicle any form of intoxication or mental derangement from the employment of the bromides in large doses. Hammond⁽¹⁰⁾ and others have also recorded cases of mental derangements with hallucinations of a melancholic character, but Escheverria was the first to call attention to the tendency to homicidal and suicidal impulses. The first case that ever caused me to look with suspicion upon the bromides as capable of producing sudden toxic effects was one of this nature. In 1890 I was called to see a patient, female, age 65, and found her to be a nervous, miserable creature, emaciated, feeble and hysterical. I administered the bromide of sodium in 60 grain doses daily, and there was some improve-

ment in the nervous symptoms. Subsequently, on account of expense, I ordered the salt in crystals for her, and only saw her occasionally. Finding that the effect of the quantity allowed was not as marked or soothing as formerly, and wishing to secure a speedy result, she gradually increased the dose. Soon a mild diarrhœa supervened, but this did not arouse my suspicions. At this time I should judge that she was taking about 150 grains daily. She became very nervous, and her family noticed some signs of periodical excitement, but no importance was attached to it. The dose was still further increased by her without my knowledge, and in a few days, it then being about two months from the inception of the treatment, she suddenly left her house, and going to a river near at hand attempted to drown herself. When rescued, she still showed a tendency to destructive outbreaks with unrestrained violence of temper. This suggested the possibility of bromic influence, and the discontinuance of the bromides at once proved the correctness of the supposition, for after that, except when once again subjected to the same treatment, did she ever exhibit any symptoms that might rise to the danger line. Dr. Draper relates the history of a case in a young man who was an epileptic, who could not take 60 grains a day for a week without becoming homicidal.

9. Bromides weaken the nervous system.

It is evident to my mind that these salts, by reason of their characteristic physiological action, must, in continued doses or large doses, depress certain organic functions, and, therefore, be weakening to the nervous system, for in order that a sedation of the nerve centers may be secured, they diminish the action of the heart, lower the temperature, and consequently lessen the blood supply to various organs. Their field of therapy is limited, and I am skeptical if their efficacy, even in temporarily controlling the nervous explosions of the epileptic, is commensurate with the deleterious effects to the patient's general constitution. A patient addicted to the bromic habit presents a picture not easily effaced from memory, for his pallid face, dilated eyes, weak and tremulous gait, are only too patent evidence of a nervous wreck and a blighted mentality.

My object in presenting this paper at this time is to direct attention to the unusual or exceptional baleful effects of the bromides in continuous or unnecessarily large doses, for, as a practitioner, I realize that our profession, and consequently the public at large, are not cognizant of them, and hence not alive to the dangers incident to their persistent use.

Too little care is often used in prescribing these drugs, and too little attention is paid to the proper regulation of the dose; circumstances, in my opinion, which are responsible for the great and increasing harm-

ful consumption of the numerous proprietary preparations of the bromides which are now used by our people as "headache" cures, "insomnia" cures, etc., and which owe their popularity and efficacy to a varying proportion of the bromides in their composition. It is not so much our indifference, as physicians, to the best methods of prescribing the bromides for specific purposes, as our carelessness in not informing our patients of the danger of these preparations, whereby they are all but unconsciously contracting the "bromo" habit, that we are reprehensible. It is not the small and occasional dose that ultimately wrecks the constitution, but the continuous daily use, in many cases, for every nervous manifestation, as conceived and diagnosed by the layman himself without the knowledge or direction of the physician.

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PROCEEDINGS OF SOCIETIES.

RICHMOND ACADEMY OF MEDICINE AND SURGERY.

Regular Meeting, August 25 1896, Hall of Y.M.C.A.

Dr. Landon B. Edwards, President, in the chair. Dr. Mark W. Peyser, Secretary and Reporter.

Dr. J. Allison Hodges read a paper on "The Not Usual Effects of the Bromides." [See page 580.]

DISCUSSION.

Dr. J. N. Upshur remarked that Dr. Hodges' paper was one of great value to the Academy and the profession at large. He entirely agreed with the views expressed in it. For many years he has believed that the profession is as much too prone to give the bromides as mor-

phine. He was peculiarly in sympathy with the statement as to the indiscriminate use by the profession and laity of the various proprietary preparations containing these agents. He has been in the habit of prescribing the bromides with more or less frequency for several years, because he did not wish to prescribe them empirically, and because of their effect on the circulation. He hoped the article would be widely read, and that the profession would heed the warning given.

Dr. Wm. S. Gordon agreed with both gentlemen preceding him. Of course, it is routine practice to give the bromides in epilepsy. He narrated the case of an epileptic girl, who, after taking considerable doses, developed all the prominent symptoms mentioned by Dr. Hodges; and at the time, he wondered how far they were due to the medicine or the disease. He asked if, under these circumstances, had Dr. Hodges substituted hydrobromic acid, and, if so, the symptoms when pushed to the farthest point? He has used hydrobromic acid with good effect, but he had never continued it long enough to contrast its effects with those of the bromide salts.

The President agreed with most of the points made by Dr. Hodges; and yet he could not allow the enthusiasm occasioned by the valuable paper to overshadow the good results often obtained from the use of the bromides. He did not know how we could manage without them. It was not usual, in his experience, for patients to desire a continuance of their use; he wished to do away with the idea that there is a bromide habit, due to a desire on the part of the patient to take this agent. Large doses have their value in certain cases; but, ordinarily, these are not called for. As a rule, the bromide treatment is the most valuable for epilepsy. In the experience of those treating petit mal, it is of little value; but in the grand mal, it is of utmost value.

Suicidal and homicidal tendencies are noted, not in the cases where there is deliberation and cunning, but in the careless, somnambulistic, etc. At any rate, he was not prepared to say these tendencies came from bromism. The epileptic is often dangerous to himself and others, even without treatment by bromides.

Dr. Hodges in closing the discussion agreed with Dr. Edwards in the efficacy of the bromides in some cases, but limited their greatest utility to cerebral disorders from overaction. He differed with him, however, as to the danger of patients forming a "bromo habit," and cited the large and increasing use by the laity of the numerous bromo preparations, as was evidenced by their enormous consumption within the past few years. He doubted the necessity of the bromides or their ultimate benefit to the patient in the treatment of epilepsy, and cited instances to substantiate this assertion, claiming that other drugs, or even the bromides differently administered, would accomplish the same re-

sults. He had used hydrobromic acid as a sedative and hypnotic, and had found it useful; but had never pushed it to its physiological effects. It was probable, however, that, under such conditions, it would prove an irritant to the gastric mucous membrane.

REPORTS OF CASES.

CONVULSIONS AND HEMI-HYPERAESTHESIA PRECEDING TYPHOID FEVER.

Dr. Upshur reported the case of a woman, age 20. Two months ago he was sent for at night and found she had had a severe convulsion before his arrival. When seen, her mind was not entirely clear—was very nervous, presenting symptoms of a markedly hysterical condition. There had been much malaise for a week previous. The prominent symptom was hyperæsthesia of the whole right half of the body and head, especially marked in the arm and leg. Simple touch would throw the group of muscles in the neighborhood into violent spasms. Along with this, for a week, there had been a regular rise and fall of temperature—99° in the morning to 101° in the afternoon. At the end of the week, the hyperæsthesia seemed to subside, but she was nervous and sleepless; the tongue was heavily coated, pulse frequent, abdomen distended and tender, with gurgling in the right iliac fossa. In fourteen or fifteen days symptoms of marked typhoid made their appearance. From that point the case was typical, with a tendency to development of coma vigil. Coma did supervene, and the patient died on the twenty-seventh day. Obstinate constipation persisted throughout the course of the disease. Every action was procured by an enema. The onset of the trouble was the most curious he had ever seen.

Dr. Upshur also reported the next case, concerning which he would like to have an expression of opinion. Woman, age 40; seen ten days ago in consultation. She had been in delicate health for about a year, and there was obscurity as to her trouble. During last spring she was satisfied as to the existence of pregnancy. Taking some medicine given by a negress she aborted and recovered. Later, she was seized with violent pain in the right groin, extending around the crest of the ilium down the thigh—being particularly painful in the knee, and paroxysmal in character, especially pronounced in the morning and afternoon. There were rises and falls of temperature at various times of the day, from 99° to 104.5° F.

During an attack, when first seen, he had found an overdistended bladder. The urine was albuminous, but no trouble ensued upon drawing it off.

Ten days ago she was removed to the Old Dominion Hospital, the temperature rising as a result two degrees, falling in a day or two.

The administration of chloroform did not effect a complete relaxation of the abdominal muscles, but a thorough examination of the pelvis revealed no trouble, unless, possibly, a pre-existent endometritis. A point just above Poupart's ligament on the right side showed evidence of tenderness. Per vaginam, he could approximate the fingers so that the thickness of the abdominal wall could be made out. Examination of the urine by Mr. Blair evidenced slight albumin, but was negative otherwise.

Query: What is the matter? The only pronounced symptom is the pain. She will not voluntarily change her position, and, as a result, she has a bed-sore.

What is the cause of the rise of temperature? Under the use of turpentine, the condition has improved somewhat. There may be an abscess of the kidney. He had suspected the pain to be hysterical. She had been taking a great deal of morphine—in one day, a grain and a half hypodermically. Since being at the hospital, the doctor has tried to do away with its use. The patient has taken several remedies for the relief of pain, usually falling back on morphine. As an experiment, a syringe of pure water was injected, but in a half hour, complaint of great pain obliged administration of a one-fourth grain of morphine. The doctor thought a great deal of the pain was due to the fear of it on being moved.

There were no sweats, no hectic; she is not sensitive to light pressure. Examination by her attending physician elicited great complaint of pain, but in ten minutes he could manipulate and not get much response.

Dr. Hodges wished to suggest that the first case was thrombus with suppuration, complicated or not by typhoid.

He thought the second case more than simple hysteria. If there were no disease of the pelvic organs, it might be neuralgia or neuritis with after-developed hysteria or fever.

Dr. Upshur replied that there was no neuritis.

IS THERE A TYPHO-MALARIAL FEVER?

The secretary reported a case not because of uniqueness, but as contributing to the settlement of the much-mooted existence of typho-malarial fever.

T. H. P., male, age 36, more than three weeks ago was taken sick with what looked like cholera morbus. In four days a chill came on, followed by sweating and fever; thereafter, four or five days, there were two and three chills at irregular intervals daily; the temperature one morning reaching 106°, falling to 102° upon the application of a cold bath. Thirty grains of hydrochlorate of quinine were administered in

twelve hours, and as a result chills ceased, but there remained a persistent fever, which was stationary in the morning, rising in the afternoon, and accompanied by nearly all the symptoms which justified a diagnosis of typhoid fever. He entered his fourth week of sickness to-day, but his temperature has been normal for four or five days in the morning, with exacerbation in the afternoon. Chills came on again last Friday, and, with the exception of Sunday, he has had them daily at irregular intervals, and sometimes two in twenty-four hours.

Dr. R. F. Williams made a blood examination and found absolutely no plasmodium, but a marked leucocytosis, which argues a favorable result.

Drs. Gordon and Deaton saw the case in consultation, and agreed that the trouble is pure typhoid.

Dr. Wm. S. Gordon said regarding this case, that it was undoubtedly typhoid. If it had been typho-malaria, when the chills were stopped the fever should have ceased, and the blood examination further verified the diagnosis. He reported the case of a lady confined two weeks ago. He had ceased his attention, when on the twelfth day she was seized by a violent chill at 4:30 P. M. and again at 11 P. M. Friday last, there was another at 11 A. M. Quartan fever being suspected, he gave quinine, but there ensued a chill at 11 P. M., followed by high fever and sweating. There was no trouble with the breast that morning; the lochia were free from odor, and everything relating to the uterus was normal. At night, the breast was affected and lead-water was advised. The next morning mammitis had come on—no suppuration. The breast trouble did not ensue until the fourth day. It was relieved. Yesterday the patient was entirely free from fever. She was thoroughly cinchonized. Remembering the influence on the mind of the time of attacks he endeavored to take her's from under its influence by mental diversion, anecdotes, etc.; but at 4:30 P. M. the chill came. If she had not been under the influence of quinine, she would in all probability have had another last night. The case, a double quotidian of the quartan type, is one the doctor has never seen before.

As to the cause: The house is surrounded by flowers, grown over with vines; has, necessarily, decaying vegetation in the garden; flowers in the rooms. These, with moisture and heat, furnish all the etiology desired.

FACIAL PARALYSIS FOLLOWING MUMPS, ENLARGED ONE-HALF OF THYROID, ETC.

Dr. Jacob Michaux described a case of facial paralysis. Girl, age 17; personal history good. A short time ago he was told she had mumps. The left side of the face and lips were decidedly swollen, having the

stiff appearance indicating loss of motion, which, indeed, was the case. There was tenderness under the ear, but he was struck by the absence of swelling in front of the ear (which usually occurs in mumps) and by the appearance of the lids, mouth and side of the face. The tissues on the affected side were tender, especially at the angle of the jaw.

On complaining of her throat, he examined it and found enlargement of the right lobe of the thyroid decided, but none of the left.

She was treated at home, until acute symptoms subsided, with iodide of potassium and corrosive chloride of mercury. After she was able to be up and about, faradic electricity was applied to the affected side, and both it and galvanic, especially the latter, to the enlarged gland.

The doctor wished to know if there was any connection between the two conditions, or the parts. If so, what?

The girl was not positive as to the existence of thyroid enlargement before the facial symptoms. There was no sore throat, but some temperature.

EXTRA UTERINE CAVITY.

Dr. Michaux' second case was an unusual condition of the uterine canal, which he has seen twice. Both were in cases of abortion—one at two, the other at four months. In the latter, on introduction of the finger into the os, he found a cavity, which, as well as he could make out, was three inches in diameter. At first, he thought he had a case of placenta prævia, but on passing the finger through, he discovered the foetus and placenta, which were duly delivered. In the other case the canal was smaller.

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SELECTIONS.

THE TREATMENT OF BURNS.

By DR. PAUL WALTON,

Instructor in the University of Ghent and Assistant Surgeon at the Hospital Civil.

Aristol belongs to the pleiad of remedies which in recent times have been prepared by the synthetical method and introduced into therapeutics. It is a quite stable product containing 45.8 per cent. iodine, and occurs as a light red, extremely fine powder, almost odorless, insoluble in water and glycerine, slightly soluble in alcohol, and readily dissolved in ether, collodion and fixed oils. It was first therapeutically tested by Eichhoff, who employed it in psoriasis, lupus, various ulcerations of parasitic or syphilitic character. As a cicatrizant, aristol is undoubtedly superior to iodoform; it is devoid of the toxic and irritant character of

the latter, and, furthermore, presents the remarkable advantage of reducing the sensibility of painful areas which are treated with it. Applied to a wound, it produces at first a slight feeling of burning which is rapidly succeeded by diminution of the painful sensations. The antiseptic and cicatrizant properties of the drug led to its being used in the treatment of burns. While slight burns readily heal under the influence of the majority of the non-irritating cicatrizant remedies at the disposal of the surgeon, this is not the case when we have to deal with extensive burns, which produce large atonic wounds and cause considerable constitutional disturbance, and which resist therapeutic measures of all kinds, and greatly tax the patience of the surgeon. The large number of drugs recommended for the treatment of these extensive wound surfaces, demonstrates distinctly their unreliable effects. None of them—it can be said—could pose as a specific; but since the introduction of aristol, a change herein has probably taken place.

Buffil and V. Kliegl (Vienna) have already emphasized the celerity with which this drug induces granulation and cicatrization, as well as to the almost instantaneous and permanent removal of pains in cases of burns. They believe that aristol is possessed of all the advantages demanded of a remedy employed for this purpose, and found that in the treatment of extensive burns it is superior to iodoform; it can be used without fear of the toxic effects which have sometimes occurred after the application of iodoform to extensive wound surfaces.

V. Kliegl advises that in cases of burns the affected areas be first disinfected with a two per cent. solution of boric acid and the vesicles opened. He then applies aristol gauze, over which is placed a layer of the sterilized gauze and rubber tissue, and this dressing is fixed by a few turns of bandage. When the secretion subsides, he recommends the following ointment:

Aristol	5.
Ol. Olivar	10,
Solve adde Vaseline	40.

It is noteworthy that oily solutions of aristol must be prepared in the cold, as heat rapidly alters this product.

Those authors who have employed aristol in cases of burns, consider it superior to all similar products, and regard this condition as its chief indication. Since a year we have prescribed this drug systematically in all cases of burns occurring in private practice, or in surgical service of the hospital. In the Dr. Colson's division of the hospital we have used it in several cases of extremely extensive burns with pronounced success. We avoid disinfection by means of antiseptic solutions, for they are either inert, irritating, or toxic. Repeated washing with warm water, without too much rubbing of the wound; opening of the

blebs, removal of the eschars, avoiding strong hæmorrhage; if possible, frequent and prolonged warm baths and drying of all burned parts with absorbent cotton; finally, dusting the entire area with aristol, which, by virtue of its extreme fineness, is distributed uniformly and over which is placed a dressing of sterilized gauze and cotton—this constitutes the treatment.

Strict asepsis of the wound is an essential prerequisite of success, for, notwithstanding the observations of Neisser, who emphasizes the marked antiseptic properties of aristol, clinical data seem to show that, at least in burns, this influence is quite weak—an observation which does impair the value of this remedy. Asepsis of the affected parts can be readily attained by repeated cleansing with warm boiled water, while the surroundings of the wound were cleansed with brush and soap, and the fatty matter removed with ether and alcohol.

This disinfection must be carried out very strictly, with much patience and perseverance. In cases of extensive burns covering a large portion of the surface of the body, and in which there is formation of a large eschar, the best procedure consists in keeping the patient in a bath during the entire period of cicatrization. If aristol be employed in the form of the powder, then at each change of dressing the surroundings should be carefully cleansed; all epithelial shreds and crusts removed; while if aristol be used in the form of an ointment, the healthy surroundings should each time be cleansed of fat with ether. By continued careful treatment the cicatrization of very extensive burns can be secured in this manner, as in the following cases:

Case I. A vigorous man, aged thirty, sustained from a burn with petroleum a wound occupying one-half of the scalp, the forehead, and the right ear, and extending in form of a broad band over the right side of the neck to the sternum, covering altogether a surface of seven square centimeters. After strict asepsis we applied a dressing moistened in boiled water, in order to detach the eschars which could not be removed with scissors, as the existence of marked hæmophilia rendered dangerous any interference. We attempted to restore the upper eyelid and the superciliary arch by Thiersch's method of skin transplantation, which was accomplished in quite a satisfactory manner. The entire wound was covered with ten per cent. aristol ointment. Besides the above the patient had four burns on the forearm and hands, each about a square centimeter in area. These were treated at once with aristol powder and cicatrized very rapidly. Of the enormous wound of the upper portion of the body, only one non-cicatrized area of the size of the palm of the hand remained on the side of the neck after three weeks.

Case II. Man, aged forty-nine, in good general health, presented multiple burns caused by explosion of a petroleum lamp. A ring-shaped

wound encircled the entire left leg from malleolus to the upper third, extending along the inner surface of the leg. On the right side of the dorsum of the foot, the entire leg to the anterior tuberosity of the tibia and the posterior internal region of the thigh were bare of epithelium; this wound occupied an area of at least 15 to 17 square centimeters. After the affected parts had been rendered as aseptic as possible, an aristol ointment was applied. At the same time the crests of the tibia of both legs were treated by Thiersch's method of skin transplantation. Under this double procedure, cicatrization proceeded very rapidly; the left leg was healed at the end of two months; the right required more time on account of the wound on the thigh which cicatrized slowly.

Case III. Man, aged thirty-five, of broken-down constitution, had burned the entire anterior portion of the body with petroleum.

The wound occupied the upper and anterior third of the thigh, the entire abdomen and the thorax as far as the mammary region; the integument of the scrotum and penis had disappeared.

At first various procedures were tried, moist boric acid, bor-vaseline dressings, Thiersch's skin transplantation, all without material benefit. The general health was more and more undermined under the influence of these enormous wounds. I now resorted to a dressing of aristol vaseline, and was very astonished to see how, under its influence, the transplanted flaps, which had been regarded as lost, and of which only a few scarcely visible islets could be observed, became adherent to the subjacent tissues and began a vigorous growth.

Cicatrization under the influence of aristol proceeded in a remarkable manner, if the bad condition of the wound be taken into consideration. After the lapse of a few months the patient could be regarded as cured. Of the enormous wound which covered a space of at least 20 square centimeters, there were visible only two small islets devoid of epithelium, with here and there small ulcerated points, the whole being less than a square centimeter in extent; and the healing of these gradually took place. We had regarded this man as lost, as all therapeutic measures had proved unavailable. Under the remarkable influence of aristol cicatrization progressed steadily; the patient regained his strength, and his general health was completely restored.

In cases of less extensive burns of the first and second degree, the application of aristol, in powder form with light dressings, gave extremely rapid and satisfactory results. In twenty cases of burns, especially of the extremities, excellent cicatrization was secured in about fourteen days. In the atonic wounds so often occurring after scalds from hot water, aristol powerfully stimulates formation of granulations which often show a tendency to become exuberant; if this occurs it seems to us advisable to replace the powder by an ointment.

Resumé: We are warranted in ascribing to aristol advantages over other remedies employed to effect rapid cicatrization, these are: Granulations are formed more rapidly, are more vigorous, and of healthier appearance; cicatrization proceeds with great celerity from the edges of the wound, and the nature of the process seems to be modified in the most favorable manner, it appears that the formation of fibrous tissue is less abundant, and that after healing has occurred the wounds have less tendency to cicatricial contraction.

Vascularization seems also to be influenced in a favorable manner. Aside from the healthy appearance of the granulations, the edges of the cicatrix show an abundance of vascular plexuses.

The slight degree of poisonous properties of aristol deserves to be emphasized, particularly if its relationship to iodoform be taken into consideration. We have failed to observe irritant effects of any kind. In a case of extensive burns of the legs, which, owing to an oversight, was dressed with iodoform on a single occasion, there developed on both legs and face a very severe eczema which could be made to disappear only with difficulty.

The disinfectant power of aristol is less than that of iodoform; acute suppurative processes seem to resist its action.

In cases of extensive infected burns, in which it is found impossible, even by careful antiseptis, to secure an aseptic condition of the wound, it is more advisable to abstain from the application of aristol, and to employ it only when the wound no longer reveals evidence of septic sup-puration.

In the powder form it should be employed for less extensive superficial wounds, where, with the secretions, it forms a firmly adherent crust which aids in the formation of a cicatrix.

For extensive wounds it is best prescribed in form of aristol ointment. In these large wounds we have found it advantageous to dust the edges with aristol powder and apply an abundance of salve on surgical lint. In these cases an infection due to external causes is to be feared, and at every change of dressing the ointment is to be removed with ether.

If these observations be borne in mind, noteworthy results can be obtained from the use of aristol in cases of burns, such as up to the present day have not been obtained from any other remedy.—Wien. Medic. Presse, No. 24, 1896.

ABSTRACTS.

SURGICAL SHOCK AND ITS TREATMENT.

An interesting paper on Multiple Synchronous Amputations, by Dr. W. L. Estes, of Bethlehem, Pennsylvania, was read, by invitation, before the New York State Association of Railway Surgeons, at its fifth annual meeting. We are indebted to the International Journal of Surgery for advance proofs, from which we reprint the following:

"I have long held the belief that surgical shock is of two kinds, or composed of two elements—the one immediate and frequently antecedent to the injury, the other secondary and subsequent. The immediate or antecedent shock is psychical, and may occur when there is absolutely no somatic injury; the secondary and subsequent shock is the one with which the surgeon usually has to contend, and this is due to hæmorrhage. So that if hæmorrhage is prevented or stopped before the patient has lost any large quantity of blood there will be comparatively little shock. I think it has been abundantly proved that immediate amputation offers the best chance of recovery after serious injuries; it is, usually, so-called shock which prevents early operations. If, therefore, hæmorrhage is prevented and no great shock occurs, the operation may be done immediately and the chances of recovery are markedly improved. It seems to me the appreciation of this point in practice has greatly reduced the mortality after multiple operations. Another point of great importance is, I think, that surgeons are better physiologists and therapists than they formerly were. This is simply in line with the general advance in the whole science (I do not say art) of medicine. The indications for stimulation and measures for resuscitation, generally, are much better understood than formerly. So that if one has to combat shock, he goes about it much more rationally than in former years. Instead of hastening through an immediate amputation, careful control of hæmorrhage by an Esmarch tourniquet, careful antisepsis of the wound and surrounding parts are practised, and, during a sufficient interval, saline infusions, hot saline enemata, strychnine, and digitalis are given, and when the blood-vessels are again filled and the heart's action has recovered some of its tone and strength by careful hæmostasis, the operations may be done and, in the majority of cases, safely done.

"There are two frequently employed measures of resuscitation, one of which, in my hands, has not been very satisfactory, and the other. I

believe, injurious, I should like to discuss more fully. My allotted time will permit little more than bare mention, however. I refer to saline intravenous infusion and the use of alcohol or ether as a stimulant. Theoretically, the intravenous injection of a so-called 'normal' saline solution would appear the readiest and best method of restoring a circulating medium after severe hæmorrhage. In the hands of other operators it has had brilliant effects and done great good. Though I have resorted to the measure in many instances, the good effect has appeared to me very evanescent and disappointing. I have, by the use of these injections, restored radical pulses which were entirely inappreciable, brought back some color to prolabia and to the surface generally, but the result was very transitory and seemed very soon to lose its efficiency, and I have been repeatedly disappointed by losing my patient after using the injections. The use of saline injections into the rectum has proved much more satisfactory in my practice, and I employ them very frequently. As is well known, saline solutions (even albuminous solutions highly salted) are readily absorbed from the rectum, and the introduction into the mesenteric and portal circulation, though indirectly, of this hot solution I have found a much more permanent method of stimulating a failing general circulation.

"The use of alcohol as a stimulant in shock has seemed harmful in so many instances that I have quite abandoned it. As a vaso-motor paralyzer, it encourages hæmorrhage and oozing; it is apt to increase restlessness, and when given in large doses it weakens the heart through its paralyzing effect on the nerves. The effect of ether is similar to that of alcohol, and when it is used hypodermically, it intensifies the weakening effect of its anæsthetic action if an operation is to be done or has been performed.

"Strychnine is now my 'sheet anchor' in cases of great weakness after severe injuries. If an anæsthetic is to be or has been used, especially if chloroform is the anæsthetic selected, I use digitalis as well as strychnine. I gave as much as one-eighth grain of strychnine sulphate, hypodermically, in the course of three or four hours, when there was urgent need of stimulating the heart. I have never observed any ill effects from this large quantity. Beginning usually with one-sixtieth of a grain, the injections are repeated sometimes two or three times in the course of an operation lasting forty or fifty minutes, and continued, after the patient has been put to bed, at longer intervals of course, together with the use of digitalis and rectal injections of hot saline solution. A number of patients, apparently moribund when received, have reacted and recovered under this treatment.

"Following shock, according to the ordinary teaching, one must expect hæmorrhage in these cases of severe multiple injuries. It is true, in

my opinion, that after the psychical shock, which always acts as a powerful vaso-motor irritant, as well as a paralyzer of the nerves of the heart, there results a paresis of the vaso-motor nerves, and as the effect of the first shock wears off, which is apt to occur either in a few minutes or in an hour or more, the open and paralyzed vessels pour out a steady stream of blood if not controlled. Fortunately, in the crushing injuries which usually require multiple operations, the vessels are also divided by tearing rather than by incision, and the elongation and pressure at the same time which mechanically sever the continuity of the vessels, as well as the other soft tissues, result in partially closing the vessels by attenuation of the lumen and the curling up of the inner and middle coats of the arteries, so that the free flow of blood is obstructed and hæmorrhage is slow, though persistent, as a rule. Laymen have been so generally indoctrinated into the elements of controlling hæmorrhage, and appliances for doing this are in so many railroads and establishments, freely furnished and kept at hand, that nowadays a man is not nearly so apt to bleed to death as formerly, and it is very rare for an injured man not to receive some appliance for the control of hæmorrhage very soon after the accident.

“Besides the ready assistance for the control of hæmorrhage, another powerful factor in saving life after multiple injuries—as was said before—is the abundance of hospitals along lines of transportation, and skilled surgeons to give aid. Instead of transporting the injured man for miles and miles to a city hospital, or, worse, attempting with bad surroundings and wretched appliances and assistants to do the necessary amputations along the wayside or at the home of the patient, it rarely happens that in the regions where railroad centers and factories and mines abound that the injured man can not be taken in a short time to a fairly well-equipped hospital where he will receive skilled attention and modern treatment. The later statistics of amputation mortality rates furnish strong arguments for the multiplication of small hospitals. I am afraid the tendency at present is to overdo this charity, but, properly distributed and regulated, there can be no question of their great good and most efficient lowering of the death-rate after injuries.

“As stated before, if the patient is in a condition to bear the operation, the best time to operate is immediately. Very frequently, however, the patient is not in a condition to bear the operation. In my judgment, it is very unwise to attempt multiple amputations, or, indeed, any major operation, if the patient is very weak, immediately upon his reception by the surgeon. With the appliances for disinfection, dressing, and hæmostasis which every ordinarily equipped surgeon has always at hand, the operation may be deferred for a period of hours without danger of serious infection. The limit of this period must always be the very begin-

ning of so-called inflammatory reaction in the crushed members. It is far less dangerous to operate in three or four hours, even if the patient is alarmingly weak, than to wait until infection has taken place and an interstitial phlegmonous inflammation has been established. I am convinced there can be no rules laid down to guide a surgeon in determining, in any given case, whether a patient is too weak or not for multiple amputation. One must judge the individual in every case, as well as the indications of physical signs, etc. Physique, physiognomy, age, as well as the general condition of the patient, are all important factors in the problem. I most strenuously deprecate the doctrine that in very marked conditions of shock an improvement is to be expected when the patient has been anæsthetized. That this does happen in many cases is true enough, but it is only in the cases of psychical shock and not in cases of acute anæmia. It is a very unsafe rule to follow, therefore, and not to be depended upon. If some time has supervened since the injury, and the patient has not been made extremely anxious by irregular or careless transportation, frightened, in other words, in my experience conditions of weakness are simply made worse by anæsthesia.

"The method and manner of anæsthetizing are also important matters. Both of the commonly used general anæsthetics, ether and chloroform, I have found weakening. To reduce this effect to a minimum, it is important to employ small doses and to continue the inhalation as short a time as practicable. In order to facilitate this I have found morphine, given in a moderate dose, hypodermically, ten minutes before the anæsthesia is begun, to be a very reliable and valuable agent; it materially assists in the anæsthesia and markedly lessens the quantity of the anæsthetic required. The manner of giving the anæsthetic is also important. Forcing and smothering ought to be sedulously avoided. Whatever cone is used, it should be borne in mind that in these weak conditions a liberal admixture of air is necessary. The degree of anæsthesia should never be profound, but simply to the stage of loss of reflex and partial relaxation. The anæsthetic should be entirely discontinued as soon as the suturing of the stump is begun. Usually, with the use of morphine, the state of anæsthesia continues long enough for the operator to comfortably place and tie his sutures."—New York Medical Journal.

SIMPLE PREPARATIONS FOR ASEPTIC OPERATIONS.

In *The Corpuscle* for February, 1896, Dr. A. J. Ochsner gives some simple directions for preparing for aseptic operations under unfavorable circumstances. His methods are so simple that they deserve to be more widely known. Doubtless every surgeon of considerable experience has devised for himself very similar methods to be practised in private houses where filth was an element to be contended with, and the less experienced operator will doubtless be interested in the study of his methods.

Dr. Ochsner says: Silk, silkworm-gut and horse-hair are enclosed in a few thicknesses of gauze and placed in a closed vessel—a tea-kettle or an ordinary tin dinner pail with a lid will do. This is placed on the stove with enough water to thoroughly cover the material, and boiled for an hour. It is then preserved in a 5 per-cent. solution of carbolic acid in water. It becomes brittle after it is a year old.

Catgut is prepared as follows: E violin strings and medium banjo strings are the most convenient sizes, and can be obtained at any music store. They are immersed in strong sulphuric ether, in a tightly corked bottle, for one week; in strong alcohol, containing one grain of corrosive sublimate to the ounce, for one week; then preserved in strong alcohol indefinitely. The alcohol should be changed once a month, as it becomes weakened by absorbing moisture from the air, which diminishes its antiseptic power.

Any suturing material which has been taken from the preserving bottle and handled during an operation should be put through the original process of disinfection before it is used. Instruments are most readily disinfected by boiling in a solution of bicarbonate of soda, a table-spoonful to the quart of water, for half an hour. Knives should be made out of one piece of metal, so they can be disinfected by scrubbing thoroughly with strong alcohol. Needles are very common carriers of infection. By heating them in an alcohol flame and then dropping them quickly into strong alcohol, they can be disinfected without having their temper spoiled.

The hands should be kept habitually clean. It is an extremely bad habit to "puddle in pus" perpetually. Of course, one cannot always avoid touching pus, but one can easily dress suppurating wounds or open small abscesses without getting infectious matter upon the fingers.

The best means of making the hands aseptic is by the free use of soap, warm water, and scrubbing-brush, then washing with strong alcohol in order to dissolve any fatty material which may still adhere to the skin, then cleaning the nails with a blunt pen-knife or nail-cleaner, and then once more washing thoroughly with soap and warm water and scrubbing-brush, in order to remove any loose material. The same method suffices for the preparation of the field of operation.

For the purpose of illustration, we will suppose that we are called to perform an operation for a strangulated hernia upon an exceedingly filthy patient in one of the dirtiest hovels in the country or in the city, with no one to assist us except a colleague who carries millions of microbes under his finger-nails. How shall we proceed to meet this emergency? We have in our surgical bag the necessary instruments—a razor, scalpels, dissecting forceps, scissors, hæmostatic forceps, a pair of long-handled sharp retractors, needles—these have been sterilized at home

and enclosed in a clean towel or canvas bag. We also carry a nail-brush, soap, a pint of strong alcohol, two ounces of flexible collodion, a five-yard package of aseptic or antiseptic gauze, and half a pound of absorbent cotton, also, half a dozen clean towels wrapped up in a towel, and this again in a piece of strong wrapping-paper. We have the necessary suturing and ligature material, prepared in the manner already described. All of these things can be carried in a moderate-sized satchel.

Arriving at the house, we place a tea-kettle full of water on the stove to boil; then we place the kitchen or dining-room table near a window, spread a quilt over this, and place a pillow at one end. All of this is covered with an oil-cloth, if one is at hand, and this with the cleanest sheet that can be obtained, or with one of our towels at the point where the operation is to be performed.

We next scrub our hands in the manner described, and treat the patient's abdomen and thighs in the same manner, carefully shaving the skin in the vicinity of the operation. For washing we use the water which has in the meantime been boiled. A pad of absorbent cotton saturated with strong alcohol is placed over the area to be operated upon, and left in place until the beginning of the operation, in order to dissolve the fatty material contained in the upper layers of the epidermis.

Four plates are now found and thoroughly scrubbed with soap and hot water and then with strong alcohol. On one of these plates we place our instruments; on a second one, pieces of aseptic gauze to be used as sponges; on a third one, ligatures and sutures already threaded; and on the fourth one, the dressings to be applied when the operation is completed. All of these preparations have occupied less than half an hour, and still they are as perfect as though the whole shanty had been turned upside down, and every nook and corner had been disinfected.

The patient is now placed on the table and anæsthetized. The field of operation is once more scrubbed with water and then with alcohol, and surrounded with four clean towels. We wash our hands once more with alcohol and with boiled water, and ask our colleague to do the same. From this time until the operation is completed and the wound dressed, we touch nothing but our sterilized instruments, sponges, sutures and ligatures, and the wound. Should our colleague forget himself and touch any unsterilized substance, he must scrub again. The four plates with their aseptic contents are carefully placed where no one can reach them except the operator.

Our colleague is on the opposite side of the table and can assist us very materially by keeping the wound open with the long-handled retractor while we do everything ourselves. The operator is responsible for the wound and must see that no one else infects it. At the same time he must not offend his colleague, because it will very materially enlarge

his sphere of usefulness if he can gain both the good-will of his colleague and his admiration for skill and care.

After closing the wound it is well to seal it by placing strips of gauze two inches wide over the incision and fastening down the edges by applying an abundance of flexible collodion. A large absorbent-cotton dressing is applied over this, and held in place with adhesive plaster and with a spica bandage, in a manner which will prevent the patient and his or her friends from touching and thus infecting the wound.

Now the patient is ready to be returned to the filthy bed. Notwithstanding this and all the other undesirable conditions, we can feel certain that the wound will heal primarily, and that the result of the operation will be perfectly satisfactory from the standpoint of aseptic surgery. The microbes in the bed, or on the ceiling, or on the floor, have not been disturbed in the least, but we are certain that no dirty hands or instruments have come in contact with the wound, and consequently it must be aseptic.—*New Medical Magazine*.

UTERINE HÆMORRHAGE.

In the *Clinical Journal* for December 18, 1895, Routh enumerates the drugs useful for hæmorrhage, as follows:

Ergot.—This is the remedy oftenest given. It acts by contracting the arterioles, apparently by virtue of its action upon the involuntary muscular fiber; and it has a special action upon the uterine muscle, encouraging tonic contraction. It may sometimes act on the intestines, and some people cannot stand it for that reason: this is well seen when the sucking child gets colic while the mother is taking ergot. Occasionally also one sees the effect of ergot on the heart, by a resulting pseudo-angina and infrequency of pulsation, especially in people whose hearts are already incompetent. The arterioles all over the body become contracted, and the heart is thus given more work to do. As a rule, however, ergot can be given for any length of time without trouble. By the lessened vascularity which it produces in the uterus it impairs the nutrition of fibroids, and it favors their extrusion by the uterine contractions it excites. Ergot ought to be given continually in all cases of uterine hæmorrhage where it is likely to be of service, beginning, as a rule, on the third or fourth day of the period, and suspending just before the menses again come on, especially if dysmenorrhœa be usually present. Sometimes one can continue the ergot in such cases by adding belladonna. The usual doses are one-half drachm of fluid extract ergot three times a day, or one or two grains of ergotin, or $\frac{1\frac{1}{2}}{120}$ to $\frac{1}{50}$ grain of the very much stronger ergotinin.

Hydrastis is another very valuable drug, and is somewhat similar in its action to the combined effect of ergot and belladonna; for, besides

producing uterine contraction, and checking hæmorrhage in the same way as ergot, it is a sedative. Half-drachm doses of the tincture answer very well.

Cannabis indica is also one of the best drugs we have, but it is not often given. One-fourth, one-third, or even one-half grain of the extract of *cannabis indica* is the usual dose, and it often seems to stop hæmorrhage even better than ergot or hydrastis. If there be pain as well as hæmorrhage—as, for instance, in dysmenorrhage caused by fibroids of the uterus—*cannabis indica* is much more useful than ergot. It can also be given in the form of tannate of cannabin, two to ten grains. The tincture is unreliable.

Lately Dr. Wright, of Netley, has introduced chloride of calcium. It was used many years ago in conjunction with bromide of potassium and chloride of ammonium, for fibroids. At that time the action of the chloride of calcium was not understood; it was supposed that it deposited lime salts in the tissues of the fibroid, inducing calcareous degeneration. It does not do that. Dr. Wright has found that it is useful in many cases of hæmorrhage, especially those due to hæmorrhagic diathesis. He was able to check hæmorrhage by giving two- to three-drachm doses of the B. P. preparation (*liquor calcii chloridi*) three times a day, after meals, for two or three days. [The strength of this preparation is one drachm of the calcium chloride to five of water.—ED.] Dr. Wright finds its action is due to the fact that the blood coagulates much more readily under its influence. The writer has tried it in one or two cases in which ergot and *cannabis indica* have failed, and it certainly does check the passive oozing of blood which sometimes continues for a week or ten days after the more profuse flooding which occurs in many cases of fibroids, and may prove to be a useful adjunct to the means already at our disposal to tide some of these bad cases over the menopause, and so enable us to more often dispense with oöphorectomy or hysterectomy.

While speaking of these special drugs, purgatives must not be omitted. They are of the greatest possible importance in the treatment of all uterine hæmorrhages, and should invariably form part of the measures adopted.

HYPNOTISM.

There seem many signs that we are witnessing the decay of hypnotism. The stream of hypnotic literature would appear to be gradually subsiding—not, perhaps, before it was time—and the interest in the subject, both public and professional, is evidently on the decline. The claim of hypnotism to take rank, not as a curious psychological phenomenon, but as a recognized branch of therapeutics, is now pressed with much less insistence and sincerity than was the case a few years ago; and it would

seem that history is once more repeating itself, and that the periodic burst of attention and curiosity evoked by the subject has for the present, as on former occasions, spent its force. To readers of *The Lancet* such a course of events will be in no way surprising. While admitting that modern hypnotism presented some new developments and refinements, we have always maintained that in essence it was identical with the mesmerism, Braidism, animal magnetism, and electro-biology of former times, and that in due course it would be found to be barren, if not noxious, in the field of medicine. Students of psychology must always be interested in the curious phenomena of hypnotism, but we feel more than well justified in having resisted the intrusion of hypnotic doctrine and practice into the domain of medical science. The dangers of the proposed new departure were evident and grave, its advantages at best problematical, at worst illusory and deceptive. It may not be amiss to recall some of the salient features of a controversy which, we suspect, is nearing its predestined termination.

A cardinal point, *ab initio*, was, Are hypnotic phenomena normal or abnormal, physiological or pathological? It has been alleged that the phenomena were perfectly normal and natural, and some of the apostles of the movement have even gone so far as to assert that more than ordinary strength and balance of mind were necessary to constitute any one a thoroughly good subject for hypnotism. It was said that the power of sustained concentration of attention was the most essential point in securing the success of the experiments, and that such a power was the very antithesis of hysteria or morbid neurosis. On the other hand, the more general and gradually prevailing opinion has been that the hypnotic trance and all the curious attendant phenomena were of the nature of disease and showed a mind not abnormally strong or even normally sane, but to a more or less extent temporarily off its balance. This latter view is, in our judgment, most in accord with recorded fact and most consistent with theory. The hypnotic subjects who abounded in Paris and Nancy did not seem to most dispassionate observers to be good examples of sane and vigorous intellect. On the contrary, the atmosphere of morbid introspection, display, and more or less charlatanisms seemed to cleave to these practised performers and all their curious evolutions. Ordinary experience of life teaches us that one of the most potent forces in human nature is the love of notoriety and the desire to become the center of interested attention. *Possunt quia posse videntur* is a principle of very wide application. Granted an atmosphere of excited interest and a strong expectancy of certain results on the part of subjects and operators, and the most astonishing effects can easily be produced. Again, if it is of the essence of hypnotism that the subject should yield his will to that of the operator, and more or less merge his personality in that of another individual, we think such a

condition much more likely to be associated with mental weakness than with mental strength. We by no means assert that conscious imposture was usual in these experiments, although we believe it had often a considerable share in the results, and we quite admit that hypnosis is a genuine phenomenon—as genuine, for example, as somnambulism; but we believe it to be essentially morbid, and associated with feebleness of will and unusual impressionability. The most probable theory of its causation has always seemed to use the view that was put forward by Heidenhain and other good physiologists—viz., that the hypnotic trance is the result of an inhibition of some portions of the cerebral substance, the remaining portions acting abnormally and giving an extraordinary response to ordinary stimuli.

The second great controversy had regard to the question, Granting that hypnosis is real and can be evoked according to definite rules, is it capable of being turned to useful account in the field of therapeutics? When we reflect upon the strong claims that were put forward for hypnotism as an anæsthetic, an analgesic, a nerve stimulant, and what not, it must seem not a little surprising that so potent an agent should be allowed to rust in the not over-stocked armory of treatment. We suspect the marvelous results alleged to have been attained have not well withstood the crucial tests of time and wider experience. There was a stage in the annals of this curious history when even grave organic maladies—e.g., hemiplegia, Bell's paralysis, etc.—were alleged to be submissive to hypnotism. We are not sure that even tumors were not alleged to have vanished on the waving of the magic hypnotic wand. But by degrees one claim only was insisted upon—namely, that hypnotism was a potent remedy for "functional" nervous affections. Every experienced physician knows that these maladies constitute the most illusive of all fields for therapeutic experiment. The victim of functional nerve-disorder not infrequently gets well with any treatment or no treatment. Above all it is clear that any strong impression on the nervous system, whether produced accidentally or by deliberate therapeutic endeavor, frequently results in the cure of such cases. That hypnotism is one way of producing such an impression we fully grant, and its beneficial effect might be freely admitted if there was no reason to suspect that the cure might be worse than the disease. To drive out neurasthenia by inducing the hypnotic state is a procedure fraught with so much peril, both on the moral and physical side, that it can only be undertaken with grave apprehension. The broken-down nervous systems that form the bulk of neurasthenic cases are bad material for doubtful psychical experiments. Rather should we commend in such cases the old and well-tried methods of treatment by rest, change, fresh air, diet, tonics, modification of unwholesome environment, suitable occupation, and recreation. These methods often

succeed, and it can at least be said that their failure does not make the last case of the patient worse than the first.

Hypnotism is undoubtedly worthy of study, but we suspect that more and more it will be handed over to the psychologist, perhaps sometimes to the alienist, and that its interest for the practical physician will steadily wane. Until the evidence of its utility is a hundredfold more conclusive than it at present appears, we shall not regret having striven to preserve medical science from identification with doctrines and methods which are tainted with charlatanry. —The Lancet—(Editorial).

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THERAPEUTICS.

DIET IN BRIGHT'S DISEASE.

The question of what diet is the most suitable in the various forms of Bright's disease has been, and is still, a much debated point. It is particularly a question where theoretical views are likely to influence practice. If Bright's disease is looked upon as a primary inflammatory affection of the kidneys, articles of diet, possessing diuretic properties, will probably be avoided. If uræmia is considered to be due to failure on the part of the kidneys to excrete nitrogeous extractives, there will be a tendency to diminish as much as possible the quantity of proteid matter in the food. It is more especially in chronic Bright's disease that the question is important. Dr. Hirshfield discusses anew the various diets suitable in this disease. He considers that albuminuria is the first point that calls for attention, and that all articles of diet which cause an unequivocal increase in the daily loss of albumen are to be avoided—for instance, alcohol and smoked meats. Eggs are not harmful in moderation. He points out that, although the actual loss of the albumin in the urine may not amount to more than a few grammes per diem, yet this loss cannot be made up by increasing the amount of proteid in the food. Not only is an increase of proteid in the food followed by an increase in the albuminuria, but, in addition, there are increased amounts of nitrogeous extractives to be excreted, and thus more strain is thrown on the damaged kidneys. Although, of course, the increased loss of albumin is much less than the increase of proteid in the food, yet it is extremely doubtful whether any proteid is retained in the body as such. In health it is known that an increased proteid food leads to increased proteid metabolism, and that, if proteid metabolism is to be checked, it is done efficiently by increasing the fatty carbo-hydrate foods. For these reasons the albuminuria is not to be combated by increased proteid diet. Many authorities on renal disease lay but little stress on the daily loss of

albumin, and think that, if the general condition of the patient is improved by a more liberal diet, this should be persevered in, notwithstanding the increased albuminuria. Hirschfield states that a rich proteid diet is likely to lead to the retention of nitrogenous extractives, since the increased excretion of these extractives following such a diet occurs later in patients with diseased kidneys than under normal conditions. Hence, such a diet must predispose to uræmia. Hale White, however, states definitely ("Med.-Chir. Trans.," vol. xxvi.) that in his experience an ordinary full diet does not increase the liability to uræmia, and he quotes one striking case in which the patient develops severe uræmia on a farinaceous diet, and when these symptoms became less, a full diet was given without any return of uræmic symptoms. Hirschfield would give about 6 ounces of meat and 13 ounces of bread daily, with a liberal allowance of vegetables and fruit, $1\frac{1}{2}$ ounces of sugar, and 5 ounces of fat, as a typical diet for a patient with chronic Bright's disease. As regards the value of milk in this disease he points out that it may be used in three ways. First (as Kerrell suggested), in small quantities—i. e., two to three pints daily, as the sole food. In this way the work of the kidneys is reduced to a minimum. At the same time it is almost a starvation diet, and is mainly useful in acute Bright's and in cases where there is a great failure of appetite. Secondly, milk may be given in large quantities, say, from four to eight pints daily. This is a form of treatment much advocated by Germain See and others. These observers state that albuminuria often disappears under this regime, and does not return when a more liberal diet is allowed. Finally, milk may be given in moderate quantities in addition to, rather than in lieu of, the mixed diet recommended above.—The Practitioner.

TETANUS OF THE NEWBORN.

In a review of this subject, Dr. Lewis H. Smith says the prognosis is not so bad as formerly thought. Eight cases recovered out of the forty he collected. The disease is now known to be caused by the entrance into the system of a rod-shaped bacillus, with one end somewhat rounded like the head of a pin. This bacillus thrives best in dirt and filth, particularly in the soil about horse stables. It has remarkable vitality and power for propagation. It gets into the system of the newborn through the umbilical blood vessels and lymphatics, and there develops a toxin that causes the muscular contractions. Prevention of the disease, therefore, depends mainly on asepsis of the umbilicus and stump of the cord. After the symptoms have shown themselves, the proper treatment is the application of antiseptics to the umbilicus, and the administration of chloral, one or two grains by the mouth, or two or four grains by rectum, every two

hours. Like diphtheria, tetanus now has a blood serum prepared from the horse, containing the tetanus antitoxin, but this method of treatment is still in the experimental stage. The antitoxin of tetanus is known as Tizzoni's.—Archives of Pediatrics, December, 1895.

THE THERAPEUTIC VALUE OF DIPHTHERIA ANTITOXIN.

Until quite recently a diagnosis of diphtheria was accepted only when a necrosis of a mucous membrane was demonstrable. Many affections of the fauces, which are now looked upon as diphtheria, were previously classed as insignificant affections, disappearing after the simplest form of treatment. This change of classification was brought about by the almost universal acceptance of the bacillus of diphtheria as the chief etiological factor. While a full acceptance of the Löffler bacillus, as the distinguishing feature of true diphtheria, greatly simplifies the etiology of pseudo-membranous affections, such acceptance utterly invalidates our old standard of comparison, so far as statistics are concerned. It is quite well known that a necrosis of the mucous membrane exists without the slightest trace of the Löffler bacillus: e. g., in the fauces, colon, rectum, bladder, uterus, etc. On the other hand, this organism may be present without the co-existence of any pathological lesion.

The Löffler bacillus is very peculiarly situated. It appears to have a prototype which differs from it in one respect only, namely, in virulence. According to Abbott, however, virulence may be generated even in this prototype. In fact, the virulence of the true diphtheria bacillus varies greatly. When cultivated in nutrient bouillon, and subsequently injected into the tissues of lower animals, death may result at any time from twenty-four hours to seven days after injection, provided the culture has been grown under favorable conditions, and was virulent at the outset. But if the growth has taken place at 40° C., it loses its virulence entirely. This makes it clear that more than twenty-four hours are necessary to make a diagnosis from cultures alone.

Thus changing the diagnosis of diphtheria, it is plain that the percentage of mortality will be very much decreased; but it will not change the actual mortality caused by the disease.

The bacilli are most frequently found at the site of necrosis; seldom in the internal organs. Furthermore, it is rare that the Klebs-Löffler bacillus is not accompanied by other organisms. Examination of the blood and viscera reveals a streptococcus more often than the diphtheria bacillus. Consequently, a pure infection is a rarity; but when it does occur, the tendency is to recovery. The literature upon antitoxin shows that a number of clinicians have classified diphtheria cases received at the hospitals as "mild," "moderate," and "malignant" (and treated them accord-

ingly), thus immediately prognosticating the course of the disease. According to Baginsky (Berl. Klin. Woch., Nov. 4, 1894, p. 1025), it is impossible to foretell the results of this disease, for the advent may be extremely mild, and, in a very short time, present a most malignant character, or vice versa.

As to the changes produced in the viscera by diphtheria, we are wholly dependent on malignant cases; for very mild cases rarely have a fatal issue, consequently do not reach the autopsy table. Those cases, however, which are subjected to pathologico-anatomical examination, usually reveal what is found in nearly all instances where infection was the cause of death. Excluding the changes observed in the fauces before death, the heart muscle may be found a trifle cloudy, and, when endocarditis or pericarditis is noted, it is generally ulcerative in character. Slight hæmorrhages into the lungs are sometimes seen; slight swelling of the spleen, cloudy swelling of the liver and kidneys, are almost invariably present. It is plain, therefore, that the immediate causes of death may be legion.

At times a certain remedy has been successfully employed in combating every case occurring in one village, whereas in an adjoining village, the same remedy employed by the same physician (A. Baginsky) was almost devoid of therapeutic action. Even up to the present time, the mortality varies within extremely wide limits, depending not so much upon the remedy used as upon the character of the epidemic. Consequently, a period of one or two years is not sufficient in which to judge the efficacy of a new remedy, especially one derived from the animal kingdom, and the nature of which is so little known as is antitoxin. In the latter we have the serum of a horse, which has been rendered immune to the toxic action of the Löffler bacillus. This serum is said to be almost indifferent in its action upon the healthy organism. Now, let us consider this statement:

"As a general rule, the blood serum of some mammals dissolves the blood corpuscles of other mammals (Landois). Before the corpuscles are dissolved they run together and form sticky masses, which are apt to occlude the capillaries. After a while they give up their hæmoglobin, leaving the stroma, which yields a sticky, fibrin-like mass that may occlude the vessels. As a result there are often signs of the circulation being impeded in various organs. In man, after transfusion of blood, the skin is bluish-red (bloody urine has been observed in a man after the injection of 100 gmes. of lamb's blood), in consequence of the stagnation of the blood in the cutaneous vessel. Difficulty of breathing occurs from obstruction in the capillaries of the lungs; while there may be rupture of small bronchial vessels, causing sanguineous expectoration. Degeneration of the parenchyma of the kidney occurs as a result of the occlusion

of some of the renal vessels. The uriniferous tubules become plugged with coagulated albumin (Ponfick). Other symptoms, referable to the nervous system, sense organs, and heart, are all due to the interference with the circulation through them. An important symptom is the occurrence of considerable amount of fever half an hour or so after the transfusion of heterogeneous blood." (Landois and Stirling: "Human Physiology," 3d ed., 1888.)

From this it is seen that transfusion of heterogeneous serum is liable to cause very nearly the same changes in the organism as an infection with diphtheria; therefore, transfusion of a heterogeneous serum would be contra-indicated. The proof that subcutaneous administration of antitoxin does not produce the same effect is still lacking; while, on the other hand, the ill effects of its use, which have so often been reported from the very beginning of its administration, indicate that the conditions, above noted, after transfusion of blood and serum, were not exaggerated by the observers.

Several cases have been noted in which a fatal issue followed the administration of a small dose of antitoxin, to immunize apparently healthy children who had been exposed to the contagion. (Huebner, in *Deutsche Med. Woch.*, 42, 1895.) In these cases diphtheria did not appear, but this does not preclude the possibility that death may have been due to infection.

From what is known of the effects of serum transfusion, it is not altogether improbable that erythema, hæmorrhages in the skin, pain in the joints (with or without swelling), albuminuria, hæmaturia, rise of temperature, heart-weakness, and arrhythmic pulse, which have so often been noticed after the administration of antitoxin, were induced by the injection of a heterogeneous serum. However, these conditions are sometimes seen in diphtheria without the use of antitoxin. As to paralyses, we remember none proved to be due to transfusion of serum; but Huebner (*loc. cit.*) states that $7\frac{1}{2}$ per cent. of paralysis followed the administration of 1,110 immunizing units, and 12 per cent. followed the administration of 1,700 units. From this it appears that, if the dose is increased, the paralysis following its use in diphtheria increases in a greater ratio.

The experiments of Vissman (*Med. Rec.*, Sept. 14, 1895), undertaken for the purpose of determining the effects of antitoxin upon animals in which infection with diphtheria could be excluded, show that subcutaneous injection with this remedy may produce swelling of the spleen, cloudy swelling of the liver, acute parenchymatous nephritis, and, if large doses be given, even a hæmorrhagic nephritis. These experiments have been corroborated by Chapin (*N. Y. Acad. of Medicine*, Nov. 7, 1895). They would seem to indicate that subcutaneous injections of antitoxin probably produce the same effect upon the organism as transfusion of heterogeneous serum or blood.

Now, if this so-called remedy possesses immunizing and healing properties, as claimed, it deserves to be classed with Jenner's discovery, which not only reduced the number of cases of smallpox, but also reduced the percentage of the community who succumbed to the disease. Thus far such satisfactory results have not been attained, and, judging from the experiments of Vissman, Chapin, and Landois (1874), it is questionable whether this cherished hope will ever be realized. The number of cases of diphtheria reported has certainly not been reduced, and it is very doubtful whether the health reports of a single city will show that there were not more cases in 1894 and 1895 than in any two years previous to 1894. It is quite probable that every health report will show that, in certain years since 1890, there was a smaller mortality from the disease than in 1894 or 1895. The cause of the increased number of cases is due to the change in the methods of diagnosis, as above stated; other reasons for the very great increase reported can scarcely be adduced.

As for the immunizing properties of antitoxin, they are, to say the least, doubtful and very transitory in character. According to the most sanguine, the immunity lasts from about two to four weeks. Now, if, as we are taught, the serum has no effect upon the Klebs-Löffler bacillus, and this organism may live in the fauces for as long a period as two months, a single dose of antitoxin is utterly useless; for, if this organism causes the disease, what is to prevent an attack after the immunizing effect has passed away? Experiments on animals show that antitoxin lowers vitality, and if several doses are administered the vitality is correspondingly lowered, the patient being thus rendered less able to combat infection. This increased liability to infection is indicated, though not absolutely proved, by several reports. For example: Aaser (*Deutsche Med. Woch.*, No. 22, 1895) found that 2 per cent. of the children in his hospital had diphtheria bacilli in their fauces. The remainder (24) were transferred to another ward, where antitoxin was administered for purposes of immunization. Three of the latter group were attacked by diphtheria, while those having Löffler bacilli in their throats suffered no ill effects from their presence.

So far as we know, no instance in which a single or several doses of antitoxin have caused the death of animals has been reported; but several cases have been recorded in which death soon followed after its administration to children, and that, too, without there being positive evidence that lethal exitus was due to another cause—for example, Alfoeldi's case (*Pesth. Med.-Chir. Presse*, No. 10, 1895.)

Finally, while the percentage of mortality in diphtheria, as compared with the total number of cases reported, has been appreciably diminished, it is still doubtful whether the percentage of the community succumbing to this malady has been reduced or increased.—Editorial, *American Medico-Surgical Bulletin*.

MISCELLANEOUS.

THE QUANTITATIVE DETERMINATION OF THE HYDROCHLORIC ACID IN HUMAN GASTRIC JUICE.—Dr. Hermann Strauss (*Deutsches Archiv f. klin. Medicin*, Band, lvi, p. 87, 1895), after a very careful comparative study of the various methods in common use, arrives at the following conclusions as to their relative value:

1. The reaction with dimethylamidoazobenzol is easily carried out, and has few complications.

2. The recognition of the dividing line is relatively difficult in the dimethylamidoazobenzol reaction on account of the gradual character of the change. It requires considerable practice, and the result is much affected by the personal equation of the investigator on account of the difference in the development of the color sense. The application of the method of titrating with an aqueous 1 per cent. solution of congo red does not give as gradual a boundary if the end of the reaction is considered to be the moment when the addition of a drop of gastric contents to the indicator does not cause an immediate blue-black discoloration at the line of contact of the two liquids.

3. A 0.5 per cent. alcoholic dimethylamidoazobenzol solution and a 1 per cent. aqueous solution of congo red are, in regard to their sensitiveness to free hydrochloric acid in human gastric juice, more delicate than Günzburg's reagent and congo paper. The solution of dimethylamidoazobenzol is, like the solution of congo red, more sensitive than paper that has been saturated with it.

4. Both indicators appear to act only upon uncombined hydrochloric acid.

5. Solutions of acid phosphates concentrated to 0.5 per cent. or more produce a change of color with dimethylamidoazobenzol solution, or 1 per cent. solution of congo red, that although not identical with that produced by minute quantities of free hydrochloric acid, is so similar as to be easily confused with it.

6. Organic acids, particularly lactic acid, have in concentrations, such as occur in pathological human gastric contents, the quality of giving a positive reaction with both indicators.

7. A 1 per cent. solution of congo red is more sensitive to all the substances that have been mentioned than the dimethylamidoazobenzol solution. It possesses all the advantages, but also all the disadvantages in still higher degree than the latter.

As congo paper is usually very slightly sensitive to organic acids in the degree of concentration in which they are usually found in the gastric juice, it is a very valuable reagent for merely qualitative work. In conclusion Strauss gives a few statistics concerning the relative frequency of persistent failure of free hydrochloric acid in the gastric contents after a test breakfast. In 170 cases that he examined in Giessen, in none of which carcinoma was present, it was absent eight times, and in five also after a test meal. In 154 non-carcinomatous cases, to whom the test meal had been given, it was absent twelve times. In Berlin, on the other hand, ninety-two cases were examined with the test breakfast, and twenty-five failed persistently to give the hydrochloric acid action. The average total acidity of the cases examined with the test breakfast in Giessen was forty-seven, and for the cases in Berlin, thirty-seven.—*International Med. Magazine*.

A SUBDIAPHRAGMATIC ABSCESS SIMULATING EMPYEMA.—Such a case forms the subject of an article by Dr. F. Tilden Brown, to appear in the forthcoming Report of the Presbyterian Hospital, of which an advance proof-sheet has kindly been sent to us. The patient was a woman, twenty-nine years old, a native of Ireland, who had been married for five years. She was admitted on June 9, 1893. Two years before she had been delivered of a dead child after protracted and instrumental labor. A year later she had begun to have pain in the left inguinal region. This pain had continued for seven months, when complete obstruction from fæcal impaction had made her critically ill. Being relieved, she had subsequently kept herself free from abdominal pain by using small daily doses of castor oil. She entered the hospital for the repair of a lacerated cervix and perinæum. Perinæorrhaphy and trachelorrhaphy were performed on the 11th. On the 19th she complained of pain in the right umbilical region. On the 21st her temperature rose suddenly to 103.6° ; pulse, 120; respiration, 20. Free catharsis and quinine effected a temporary fall of temperature. On the 26th the temperature was still between 103° and 104° every afternoon, and she had pain in the left lumbar region. She vomited frequently and looked sick. Nothing was found on examination. On the 30th it was noted that for the last few days her temperature had not been over 100° , but pain in the left side continued. She vomited at times. On July 7th she complained of pain in the abdomen, was restless, vomiting, had diarrhoea, and again had a high afternoon temperature. Lavage of the colon was given. On the 20th she continued to have afternoon fever, followed by profuse sweating, and had been delirious the night before. Pain in the left side was complained of. On the 21st an aspirating needle was introduced in the eighth intercostal space, above and behind the angle of the left scapula, and a yellowish

fluid withdrawn. Examination showed it to be pus, and by culture a pure growth of colon bacillus was obtained. On the 25th she had a large and painful double parotiditis. On the 29th it was noted that until then the patient and her family had declined an operation. She was now in a critical condition. Under ether anesthesia aspiration was practised in the eighth intercostal space, in the mid-axillary line, and pus drawn. An incision was made upon the seventh rib, and an inch and a half of the bone was excised. There was no bulging forward of the parietal pleura. On making an incision through the tissue which presented, which looked rather more like muscle than compressed lung, the subdiaphragmatic abscess was for the first time suspected. Through the completed incision the finger could touch the concavity of the diaphragm above, and on evacuation of a large quantity of offensive pus and broken-down tissue the apex beat could be reached on the inner side, and what appeared to be disintegrated spleen toward the lower side of the wound. Hot douching brought away much additional débris. Generous drainage with tubes and gauze was employed. The wound was covered with the usual dressings. The patient rallied but little, despite stimulation and saline infusion, and died at noon on the following day.

At the autopsy, nine hours after death, the left lung, at the base, was found hyperæmic and adherent to the diaphragm; otherwise both lungs and pleuræ, also the heart, were normal. The stomach at its cardiac end had a hard, finger-sized, white fibrous adhesion connecting with the upper part of the spleen. On the mucous surface of the stomach, opposite the adhesion, there was no gross evidence of any former perforation or ulcer. The spleen was of three times its normal size and nearly separated into two equal parts by a large necrotic infarct, the base of which was at the convexity of the organ. The upper half of the spleen was drawn toward the stomach by the fibrous band, and occupied a position at right angles to the normal axis. Firm adhesions connected the splenic halves to all surrounding parts except the diaphragm above. The peritoneal cavity was thus protected. Both kidneys had numerous small white infarcts. On the posterior lower surface of the uterus there was a fibroid of the size of a duck's egg. The tissues of the perinæum and cervix uteri appeared normal and the process of repair seemed perfect. There was no gross evidence to intimate that infection had occurred in connection with the operation.

The history of fæcal impaction, says Dr. Brown, was explained at the autopsy by the presence of a uterine fibroid indirectly invading the lumen of the rectum. The suspicion of subdiaphragmatic abscess should have occurred when the first pus drawn by aspiration yielded only a culture of *Bacillus coli communis*, added to the fact that there had been no pre-existing pulmonary history, although the physical signs corre-

sponded to and naturally suggested empyema. The occurrence of double symptomatic parotiditis should also have aided to attract attention to the probability of a process involving the peritonæum rather than the pleura. Meltzer, in his paper on subphrenic abscess, says Dr. Brown, refers to the error apt to ensue from placing too great reliance upon physical signs, and cites in evidence Wintrich's mistaking a subdiaphragmatic abscess containing air for a pyopneumothorax, and yet he does not wholly agree with Leyden, who maintains that the ætiology and history of the existing sickness is the only means of diagnosing a subphrenic abscess from an empyema or pyopneumothorax, for in two of the cases which he (Meltzer) has had himself such a dependence for diagnostic purposes would have proved deceptive where subphrenic abscess existed, and yet the primary cause was located in the cavity above the diaphragm in both cases. Moreover, he believes he has demonstrated that there are cases of intrapleural effusion with an exclusive and pronounced abdominal history. Penrose and Dickinson have reported ten cases of subdiaphragmatic abscess, in all of which a gastric perforation was found at the autopsy. In another case there was no perforation, but a cicatrized ulcer, where the cicatrization had apparently taken place subsequently to the formation of the abscess. In my case, says Dr. Brown, it is rational to presume that the same conditions pertained, and that the compact fibrous band uniting the stomach and spleen was a former walled-in fistula leading from a gastric perforation to the seat of the abscess. Whether the prostrating attacks of abdominal pain experienced by the patient three months before entering the hospital were due to obstructive intestinal colic or to a gastric ulcer and localized peritonitis can only be relatively inferred. At all events, the operation on the cervix and perinæum appears not to have had any connection with the fatal cepic processes afterward manifested. The case affords an opportunity to emphasize what may prove to be of value in the diagnosis between subdiaphragmatic abscess and empyema—namely, when pus which is aspirated from a region common to both affections yields on culture a pure or mixed growth of *Bacillus coli communis* there is a strong probability that the point of suppuration is situated below the diaphragm.—N. Y. Med. Journal.

SUGGESTIONS IN THE TREATMENT OF CHANCROIDS.—Dr. Geyer, assistant physician to the City Hospital, of Elberfeld, reports a method of treating chancroids which has been employed in fourteen cases with marked satisfaction. After thorough disinfection with sublimate solution the sore is covered thrice daily with a thin layer of euophen applied with a brush, or, better still, an insufflator. Three of the patients were women presenting more or less extensive ulcerations on the inner sur-

face of the labia majora and minora, one, a child of twelve years, with large ulcers around the anus, while the remainder were men. Among the latter four had ulcers which later underwent sclerosis; five had multiple sores on the glans and prepuce, and one a gangrenous extremely ill-smelling chancroid. Before the initiation of treatment the ulcerated surfaces had a pultaceous purulent base, and irregular, infiltrated margins. After they had been treated for two or three days, however, the profuse, fetid secretion ceased, the base became clean, and granulation sprung up. Contrary to the observations of Siebel and other observers the author found that euophen acted upon the deeper parts and exerted its disinfectant and cicatrizant powers upon gangrenous wound surfaces. In the cases of gangrenous chancroids under observation after the ulcerations had been freely exposed a healthy granulating wound was obtained simply from applications of euophen powder in a thin layer. The average duration of healing up to the time of complete cicatrization and disappearance of all infiltration was sixteen days. No signs of local irritation or constitutional absorption of the drug were noted and an idiosyncrasy in certain persons does not seem to exist, and if care is taken to preserve the powder from moisture euophen may be considered as practically inodorous—all these properties rendering it far superior to iodoform.

THE USE OF ARGONIN IN THE ACUTE STAGES OF GONORRHOEA.—(A Preliminary Report.) In the August issue of the *Journal of Cutaneous and Genito-Urinary Disease*, Dr. George K. Swinburne, of New York, relates his clinical experience with argonin in the treatment of 51 cases of acute gonorrhoea observed in his service at the Good Samaritan Dispensary. The drug is a combination of silver with casein, and is a white powder, which carefully heated with water over a water bath, forms an opalescent, viscid, albuminous fluid. The maximum strength of this solution is 10 per cent.; the reaction is neutral. Of the powder, fifteen parts contain as much silver as one part of silver nitrate. A peculiarity of this compound is that the silver is not precipitated by the addition of sodium chloride, nor is the compound decomposed by contact with albuminous substances. According to Jadassohn it possesses powerful germicidal properties; it is not irritating to the mucous membrane of the urethra even in the concentrated solution, nor is it escharotic; it possesses, however, no astringent properties. As his supply of the drug was limited and as he was desirous of using it in as many cases as possible, the author adopted the following plan:

The patient was examined, history taken, character of the discharge noted, a smear taken on a slide and stained, and the patient made to urinate in two glasses always; then the urethra was irrigated with a very

weak (1 to 6,000) solution of permanganate of potassium; if the anterior urethra only was affected, then the anterior urethra only was irrigated; if the posterior urethra was also involved, intravesical irrigation from the meatus was practised; then the patient was placed on the table, and the anterior urethra slowly filled to distention, and the patient made to hold the lips of the meatus together for five to ten minutes. When posterior urethritis was present I slid a small, soft, rubber catheter, about 15 F., which had been cut off so that it was only seven inches in length, down past the cut-off muscle, and injected two drachms of the solution into the posterior urethra, withdrew the catheter and filled the anterior urethra. The catheter was lubricated with the solution of Argonin itself, which forms an excellent lubricant. I began cautiously with a 2 per cent. solution, gradually increasing to the full strength (10 per cent.), but after a few trials, finding that there was no inflammatory reaction and no pain caused by the solution, I used the full strength in all cases. The patients came daily except Sunday; a smear was taken on a glass slide and stained for gonococci, generally every other day, sometimes daily, and if the discharge disappeared, the shreds in the urine were collected on a slide and stained. No internal medication was given except for the regulation of the bowels. Of course, alcoholic beverages were cut off, but no special restriction of the diet was enforced, except that the patients were advised that milk and seltzer as a beverage was a good thing. Smoking was not prohibited.

In all the cases a rapid diminution in the discharge was noticed while they were under treatment, and in a majority of them there was noted a rapid diminution in the numbers of gonococci, and in several cases in which the presence of gonococci was established at the first examination these were not found in the smear taken on the third day, but in several instances where the patient omitted treatment for a day or several days, there would be a slight increase in discharge and a reappearance or an increase in the gonococci. In some of these cases the germ would be rather persistent, sometimes increased in numbers; but in several instances, especially where treatment had been omitted, the renewal of treatment would quickly eliminate them again.

One of the most noticeable features was the absence of any inflammatory reaction following this method of treatment; on the contrary the inflammation of the disease per se is markedly diminished from the very start; even in the earliest stages the ardor urinæ is markedly diminished, in most cases completely so. Chordee was twice complained of, but inquiry as to what the patients understood by chordee established that they suffered from simple erections, which naturally were somewhat painful. The treatment itself caused absolutely no pain in any case,

and frequent inquiry as to the effect of the injection elicited the answer that "there was a little burning for a while, but that was all."

A detailed history of a number of cases is given by S. Of those coming with a first attack he gives three which he considers remarkable. One of these cases is as follows:

Case 3457, first attack; discharge first noticed that morning; exposure three days ago; very slight, thin discharge; stained, epithelial cells, pus cells, containing gonococci, and gonococci outside free; both glasses clear, first contained one shred, which sank; Argonin, 10 per cent. The second day, no discharge, shred in first glass; Argonin, 10 per cent. The third day, came without having passed the night urine; no discharge; one shred in first glass; stained; no gonococci; epithelial cells; Argonin, 10 per cent. The fourth day, same as yesterday. The fifth day, no discharge; patient notes watery discharge on rising in morning; urine held six hours; one shred in first glass which floated, then slowly sank; stained; contained pus; epithelial cells; no gonococci; Argonin, 10 per cent. The sixth day, no discharge; urine held six hours; one floating shred in first glass; no treatment. The seventh day, same; no treatment; still under observation. This case I regard as cured at the first injection.

Another case similar to the above the author considered cured at third injection. He then goes on to say in conclusion:

I have used Argonin in about a dozen cases of chronic urethritis which were rebellious to other modes of treatment, and have been impressed with the results.

My impressions regarding this drug are that it is absolutely harmless; that it shows marked power in causing the disappearance of the gonococcus; that it has peculiar power in allaying the inflammation of the disease, and I am strongly impressed by the degree of comfort that the patients possess even in the most acute stage. The only observations which I have not yet been able to make, on account of the shortness of time the drug has been in use, is the liability of these cases to relapse, and of this a further study must be made. Naturally, if the gonococci are all removed, there will be no tendency to relapse.

Jadassohn seemed to think that by the addition of 0.3 per cent. liquor ammonia caustici he obtained greater power of penetration in chronic cases.

In forming a judgment of the value of the treatment in these cases it is to be borne in mind that they received only one injection a day, and none on Sunday; that as a rule they have to work hard to maintain themselves, and that many are machine operatives, probably the worst trade they could follow as regards this disease, and many lose their dinner hour in order to receive treatment.

MEDICAL NEWS AND NOTES.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

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Committee on By-Laws: Drs. H. D. Wey, Elmira; W. J. Harriman, Rochester; F. C. Curtis, Albany.

Committee on Hygiene: Drs. Henry R. Hopkins, 433 Franklin street, Buffalo; Lewis S. Pilcher, Brooklyn; Daniel Lewis, New York; Willis G. Macdonald, Albany; O. W. Peck, Oneonta; Lucien Howe, Buffalo; A. M. Campbell, Mt. Vernon.

Committee on Legislation: Drs. A. Walter Suiter, Herkimer; M. J. Lewi, New York; J. M. Winfield, Brooklyn.

Committee on Ethics: Drs. Charles Jewett, 330 Clinton avenue, Brooklyn; Eugene Beach, Gloversville; John L. Heffron, Syracuse.

Committee on Prize Essays: Drs. Abraham Jacobi, 110 West Thirty-fourth street, New York; Henry Hun, Albany; Wm. F. Cheesman, Auburn.

Committee on Publication: Drs. F. C. Curtis, Albany; F. D. Bailey, Brooklyn; M. D. Mann, Buffalo; Chas. H. Porter, Albany.

Business Committee: Dr. Seneca D. Powell, 12 West Fortieth street, New York, chairman; Dr. Willis G. Macdonald, 27 Eagle street, Albany; and Dr. Ernest Wende, 471 Delaware avenue, Buffalo. Communications regarding papers to be presented at the next meeting of the society, to be held at Albany, January 26-28 next, may be addressed to either member of this committee or to the president of the society, Dr. James D. Spencer, of Watertown.

The next annual meeting of the society will be held in Albany, N. Y., January 26 to 28, 1897.

FREDERIC C. CURTIS, Secretary.

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The fifteenth annual announcement of the New York Post-Graduate Medical School and Hospital, has lately been issued. Five hundred and forty-two physicians from all over this continent have attended the courses at the institution during the past year. More than one thousand operations were performed in the hospital, which is one of the largest

in the city, containing special wards for babies and children, while nearly twenty thousand patients were treated in the out-door department. Recent discoveries have revolutionized medical and surgical methods, and a man whose medical education ended fifteen years ago, is not a physician or surgeon within the present meaning of the term. Post-graduate medical instruction is for the purpose of furnishing to these graduates in medicine a means of refreshing their knowledge. It supplies them with the opportunity of coming in direct contact with disease by means of special courses in all the departments of medicine.

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The Philadelphia Polyclinic announces that its faculty has been increased and its facilities enlarged, especially in the matter of laboratory equipment; that their Roentgen apparatus is largely used for diagnosis and study; that at a new department of neuropathology, which they claimed is unexcelled, their dispensary service has increased until it is now one of the largest attached to any teaching institution in Philadelphia; 16,000 new patients annually, of which number many represent rare and obscure diseases. The number of major operations performed by the Polyclinic Hospital during the past year was over 500, of which a great number were abdominal sections. They add that their pupils have the opportunity of seeing probably twice as many more operations than the private hospital practice of the staff.

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TRI-STATE MEDICAL SOCIETY OF ALA., GA., AND TENN.

The eighth annual meeting will be held in Chattanooga, October 13, 14 and 15, 1896. Members of the medical profession are invited. Reduced rates on the railroads.

The following is a partial list of papers and indicates that the session will be of considerable scientific interest:

Convulsions in children treated with large doses of morphine, Y. L. Abernathy, Hill City, Tenn.

The therapy of antipyretics, P. L. Brouillette, Huntsville, Ala.

Cystitis; report of cases, D. S. Middleton, Rising Fawn, Ga.

A new splint for fractures of the humerus below the surgical neck, G. A. Baxter, Chattanooga.

Humphrey's operation (amputation of the penis) with presentation of patient, Cooper Holtzclaw, Chattanooga.

Diseases of the veru montanum (caput gallinaginis), W. Frank Glenn, Nashville.

Operations for abscess of the liver, W. C. Townes, Chattanooga.

Treatment of pus in the pelvis, W. E. B. Davis, Birmingham.

Some remarks on syphilis, W. F. Westmoreland, Atlanta.

The Turkish bath; its therapeutic indications, Louise Eleanor Smith, Chattanooga.

Microscopical and chemical examinations as aids to diagnosis, Katherine R. Collins, Atlanta.

Vaginal hysterectomy for bilateral suppurative processes of the uterine adnexa, W. D. Haggard, Jr., Nashville.

Some obstetrical complications, with report of cases, R. R. Kime, Atlanta.

Puerperal eclampsia. Seale Harris, Union Springs, Ala.

Puerperal eclampsia, J. E. George, Rockwood, Tenn.

Medicine; hippocratic and operative, Jno. P. Stewart, Attalla, Ala.

A statistical report of some of the more recent remedies used in the treatment of tuberculosis and summary of recent preventative methods of value, R. H. Hayes, Union Springs, Ala.

Diseases and treatment of the accessory sinuses of the nose, B. F. Travis, Chattanooga.

Diseases and treatment of the accessory sinuses of the nose, G. C. Savage, Nashville.

Paper on eye diseases, Alec Sterling, Atlanta.

Paper on eye diseases, J. M. Crawford, Atlanta.

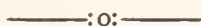
The more common surgical infections, Geo. S. Brown, Birmingham.

Report of a case of Brady cardia, W. C. Bilbro, Murfreesboro, Tenn.

The Woodbridge treatment for typhoid fever, J. W. Duncan, Atlanta.

Treatment of skin cancer, C. R. Achison, Nashville.

President's Address: the doctor of medicine, J. B. Murfree, Murfreesboro.



Program of the proceedings of the sixth annual meeting of the American Electro-Therapeutic Association, held at Allston Hall, the Studio building, Clarendon street, near St. James avenue, Boston, Mass.

FIRST DAY, TUESDAY, SEPTEMBER 29.

MORNING SESSION, 10 O'CLOCK.

Order of Business.

1. Calling the meeting to order by the president, Dr. Robert Newman, New York city.

EXECUTIVE SESSION.

2. Discussion and vote upon amendments to the constitution and by-laws.

3. Election of new members.

4. Reading of the minutes of the last meeting.

5. Unfinished business.

6. New business, resolutions, etc.
7. Reading notes from absentees.

SCIENTIFIC SESSION.

8. Reception of guests.
9. Address of welcome.
10. Response.
11. Address of the president, Dr. Robert Newman, New York city.
"The want of education in electro-therapeutics in medical colleges."
12. Report of committee of arrangements.

REPORTS OF COMMITTEES ON SCIENTIFIC QUESTIONS.

13. On introduction coils and alternators, Mr. A. E. Kennelly, Philadelphia, Pa.
14. On meters, Dr. M. A. Cleaves, New York city.
15. On static machines and condensers, Dr. W. J. Morton, New York city.
16. On constant current generators and controllers, Dr. W. J. Herdman, Ann Arbor, Mich.
17. On electrodes, Dr. C. R. Dickson, Toronto, Canada.
18. On electric light apparatus for diagnosis and therapy, Dr. J. H. Kellogg, Battle Creek, Mich.

PAPERS.

19. What can be done by means of the use of electricity to avoid surgical operations, Dr. G. Betton Massey, Philadelphia, Pa.
20. Electricity in chronic non-suppurative affections of the uterine appendages, Dr. F. Shavoir, Stamford, Conn.
Discussion by Dr. G. Betton Massey, Philadelphia, Pa.
21. Electricity in the treatment of diseases of the throat and nose, Dr. O. B. Douglass, New York city.
22. Electricity in the treatment of diseases of the larynx, Dr. W. C. Phillips, New York city.

AFTERNOON SESSION, 2.30 TO 6 O'CLOCK.

23. Discussion:—Accidents and risks in the use of street currents. How far are they practicable and safe in the use of electro-therapeutics? Mr. J. J. Carty, E. E., New York city. Discussion by Mr. John J. Cabot, E.E., Cincinnati, Ohio.
24. Accidents and risks in using electricity, generated at central stations and transmitted over underground and overhead wires to operators in electro-therapy. Danger to patients and operators and how prevented. Also liability of physicians using the same.

DIGEST.

Showing the danger to patients and operators, the utter unreliability of fuse wires, resistance coils and incandescent lamps as a pre-

ventative of excess flow of current into patient. The liability of and danger due to the crossing of operator's wire, by wires carrying high tension current, both direct and alternating, Mr. John J. Cabot, E.E., Cincinnati, Ohio.

25. Experiments upon the effects of direct electrization of the stomach, Dr. Max Einhorn, New York city.

26. Electricity in diseases of the stomach, Dr. David D. Stewart, Philadelphia, Pa.

27. The static current in the post-apoplectic state, Dr. John Gerin, Auburn, N. Y.

EVENING SESSION, 8 O'CLOCK.

28. Lecture I:—The electrical principles generally used in medical treatment, Prof. William L. Puffer, Boston, Mass.

29. Lecture II:—The relations of physics to physiology, Prof. A. E. Dolbear, Tufts College, Mass.

SECOND DAY, WEDNESDAY, SEPTEMBER 30.

MORNING SESSION, 10 O'CLOCK.

30. Electro-therapy in the treatment of the nervous, Dr. W. S. Watson, Fishkill-on-Hudson, N. Y.

31. The role of electricity in the treatment of uric acid diathesis, Dr. J. G. Davis, New York city.

32. Some observations in electro-therapeutics, Dr. D. R. Brower, Chicago, Ill.

33. The physics of the productions of the X-rays, Mr. Edwin Houston, Ph.D., Philadelphia, Pa., Mr. A. E. Kennelly, F.R.A.S., Philadelphia, Pa.

34. Treatment of strictures by electrolysis versus any other treatment, Dr. F. H. Wallace, Boston, Mass.

35. "The Newman method of urethral electrolysis." Its advantages and reasons why some operators fail, Dr. Francis B. Bishop, Washington, D. C.

36. Paradism in gynæcology, Dr. R. J. Nunn, Savannah, Ga.

AFTERNOON SESSION, 2:30 TO 6 O'CLOCK.

37. Discussion:—The motor dynamo, adapted to electro-therapeutic work, Dr. W. J. Herdman, Ann Arbor, Mich.

Discussion by Mr. Edwin W. Hammer, E.E., New York city, Dr. G. J. Englemann, Boston, Mass.

38. The application of electricity to surgery, Dr. J. W. Herdman, Ann Arbor, Mich.

39. A summary of the ultimate results in eighty-six fibroid tumors, treated by the Apostoli method, Dr. G. Betton Massey, Philadelphia, Pa.

40. Some experiences and experiments in the construction of high

tension coils and electrodes, Dr. Frank W. Ross, A.M., Elmira, N. Y.

41. Electricity considered in its relation to surgical gynæcology, Dr. O. S. Phelps, New York city.

42. A clinical report of case of rectal phlebitis treated with galvanism, Dr. D. B. D. Beaver, Reading, Pa.

43. On the electro-therapeutics of the constant current, Mr. A. E. Kennelly, F.R.A.S., Philadelphia, Pa.

44. Title to be announced, Dr. M. A. Cleaves, New York city.

45. Title to be announced, Dr. Fred H. Morse, Melrose, Mass.

EVENING SESSION, 8-9 O'CLOCK.

EXECUTIVE SESSION.

46. Election of officers for ensuing year, 1897.

Reception to the members of the American Electro-Therapeutic Association and their friends by the medical profession of Boston, Mass.

THIRD DAY, THURSDAY, OCTOBER 1.

MORNING SESSION, 10 O'CLOCK.

47. Communications.

48. Unfinished business.

49. New business.

50. Continuation of the reading of papers.

AFTERNOON SESSION, 2.30 TO 6 O'CLOCK.

51. Visit to Prof. Elihu Thomson's electrical plant, Lynn, Mass.

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Program of the proceedings of the thirteenth annual meeting of the New York State Medical Association, held Tuesday, Wednesday and Thursday, October 13, 14 and 15, 1896, at the Mott Memorial Hall, 64 Madison avenue, near Twenty-seventh street, New York city.

MEMORANDA.

1. All papers announced in this program take precedence over those offered at the opening of a session.

2. Should the list of papers, at any session, be exhausted before the time of adjournment, papers announced for the session following may be called up.

3. The author of each paper is requested to transmit it to the chairman of the Committee on Scientific Contributions as soon as it shall have been read. In order to insure promptness in the publication of the volume of transactions, each paper should be ready for the printer at the time of the meeting of the association.

4. Papers should be in the hands of the editor within one week after the close of the meeting, to insure their publication in the transactions.

5. No alterations will be made in a paper after it is in type, except at the expense of the author.

6. Engravings and diagrams will be inserted only at the expense of the author.

7. To insure prompt delivery of the volume of transactions, the secretary should be notified of changes in address, or of any errors in the list of fellows.

FIRST DAY, TUESDAY, OCTOBER 13.

MORNING SESSION, 9 O'CLOCK.

ORDER OF BUSINESS.

- I. Calling the meeting to order.
 - II. Report of the Committee of Arrangements.
 - III. Address by the president: "Medical Expert Testimony."
 - IV. Annual report of the council.
 - V. Report of special committees.
 - VI. Unfinished business.
 - VII. New business.
 - A. Annual report of the presidents of branch associations, in their numerical order, to be read by title.
 - B. Annual report of the president of the New York County Medical Association, to be read by title.
 1. "The technique of intubation in children, some remarks on the time for operation and after-treatment."
By Thomas J. Hillis, M.D., of New York County.
 2. "Functionless organs, are there any? Possible use of the appendix vermiformis."
By Nelson L. North, M.D., of Kings County.
 3. "The elongation of retracted muscles in club foot."
By T. M. Ludlow Chrystie, M.D., of New York County.
 4. Special report on "Criminology."
By Austin Flint, M.D., of New York County.
 5. Brief comments on the materia medica, pharmacy and therapeutics of the year ending October 1, 1896.
By E. H. Squibb, M.D., of Kings County.
- VIII. Announcement by the presiding officer that the fellows from the different districts shall appoint two members of the Nominating Committee from each district.
- IX. Appointment by the president of a member at large of the Nominating Committee.
- X. Adjournment of the session. During this recess of half an hour, the fellows from the different districts shall meet to appoint the two members of the Nominating Committee from each district.

AFTERNOON SESSION, 1 O'CLOCK.

6. Discussion on Surgery: "Prostatic Enlargement."

The discussion will be opened by J. W. S. Gouley, M.D., of New York County, propounding the following questions:

Question I. What is the nature of prostatic enlargement?

Question II. How is prostatic enlargement recognized?

Question III. What are the effects of prostatic enlargement, and how may they be counteracted?

Question IV. When is operative interference indicated, and what operations may be safely performed for prostatic enlargement?

These questions will be discussed by:

7. Samuel Alexander, M.D., of New York County.

8. William S. Tremaine, M.D., of Erie County.

9. Donald Maclean, M.D., of Detroit, Mich.

10. W. G. Brownson, M.D., of Noroton, Conn.

11. Douglas Ayres, M.D., of Montgomery County.

12. John A. Wyeth, M.D., of New York County.

13. The treatment of fecal fistula, with reports of cases, by Frederick Holme Wiggin, M.D., of New York County.

14. Amputation of the lower third of the leg, with periosteal flap, by Joseph D. Bryant, M.D., of New York County.

15. Suture of the liver for incised wounds, by Stephen Smith, M.D., of New York County.

16. Operation for rectal hæmorrhoids and prolapse by submucous ligature, by Benjamin M. Ricketts, M.D., of Cincinnati, Ohio.

NIGHT SESSION, 7.30 O'CLOCK.

17. The practical uses of Roentgen's discovery as applied to surgery, with illustrations, by Reginald H. Sayre, M.D., of New York County.

18. The treatment of otorrhœa and its importance, by Edward B. Dench, M.D., of New York County.

19. The relation of nose and throat affections to diseases of the ear, by Frank S. Milbury, M.D., of Kings County.

20. By Charles Stedman Bull, M.D., of New York County.

SECOND DAY, WEDNESDAY, OCTOBER 14.

MORNING SESSION, 9 O'CLOCK.

ORDER OF BUSINESS.

I. Calling the meeting to order.

II. Communications from the council.

III. Reports of special committee.

IV. Unfinished business.

V. New business.

21. Temperature as an element in prognosis, by John Shrady, M.D., of New York County.
22. Diphtheria, by Thomas G. Acker, M.D., of Westchester County.
23. On the treatment of inebriety, by T. D. Crothers, M.D., of Hartford, Conn.
24. Further remarks on the domestic test of albumen in urine, by John G. Truax, M.D., of New York County.
25. A new microtome.
26. A successful plaster of Paris bandage cutter, by Sidney Yankauer, M.D., of New York County.
27. The physiological deductions regarding the usefulness of so-called animal extracts, by H. A. Haubold, M.D., of New York County.

VI. Adjournment of the session.

AFTERNOON SESSION, 1 O'CLOCK.

28. Two interesting cases of surgery of the kidney, by J. E. Janvrin, M.D., of New York County.
29. Recent investigations concerning eclampsia, by William T. Lusk, M.D., of New York County.
30. Puerperal eclampsia; studied with reference to pathogenesis and therapeutics. By George T. Harrison, M.D., of New York County.
31. The palliative treatment of cancer of the cervix and bladder in women, by Nathan G. Bozeman, M.D., of New York County.
32. Rare complications in two cases of hysterectomy, by Ely Van de Warker, M.D., of Onondaga County.
33. By Robert Aberdein, M.D., of Onondaga County.
34. One point in the treatment of endometritis, by William H. Robb, M.D., of Montgomery County.

NIGHT SESSION.

35. Address on surgery, by Charles Phelps, M.D., of New York County.

COLLATION.

THIRD DAY, THURSDAY, OCTOBER 15.

MORNING SESSION, 9 O'CLOCK.

ORDER OF BUSINESS.

- I. Calling the meeting to order.
- II. Communications from the council.
- III. Report of Nominating Committee, and action upon such report by the association.
- IV. Report of special committees.
- V. Unfinished business.

VI. New business.

36. The vitality of cutaneous epithelium, with report of clinical observations in skin grafting, by Zera J. Lusk, of Wyoming County.

37. Acute amnesia, by William D. Granger, M.D., of Westchester County.

38. The duty of the public to the physician, by William M. Bemus, M.D., of Chautauqua County.

39. Supplementary notes upon tendon grafting and muscle transplantation for deformities following infantile paralysis, by S. E. Milliken, M.D., of New York County.

40. The medico-legal aspect of prison reform, by Ernest H. Schmid, M.D., of Westchester County.

41. Auscultatory percussion, by Louis L. Seaman, M.D., of New York County.

42. Druggist versus doctor, by Henry C. Van Zandt, M.D., of Schenectady County.

43. The peripheral neuralgias, traumatic and toxic, by Thomas H. Manley, M.D., of New York County.

44. The passing of venesection, by H. D. Didama, M.D., of Onondaga County.

45. A class of fatal cases, presumably due to intestinal ptomaines, by E. D. Ferguson, M.D., of Rensselaer County.

VII. Adjournment of the session.

MEETING OF THE COUNCIL.

AFTERNOON SESSION.



GAILLARD'S MEDICAL JOURNAL.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY

Scientia et Veritas Sine Timore.

M. E. GAILLARD, (PUBLISHER.)

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Articles for publication will be received with the understanding that they are contributed exclusively to this journal. Reprints will be furnished at actual cost, orders for which should accompany the manuscript. Authors of accepted articles may receive twelve copies of the issue in which they are published. Necessary illustrations will be furnished without expense to authors when suitable drawings or photographs are furnished.

FEES FOR LIFE INSURANCE EXAMINATIONS.

The agitation started on the Pacific Slope, in regard to the reduction in the amount of fees allowed medical commissioners by several of the large life insurance companies, has resulted in the re-establishment by one of the leading companies of the rates previously in force. This may be said to be the result of the concerted and intelligent protest of the best members of the profession in the district in which the agitation was begun.

Let us look for a minute at the question of medical examinations for life insurance. Whatever may be said in regard to the indifferent way in which some of the examinations are made, in regard to the distrust which must on the face of the reports attach to some of the papers turned into the home offices from the medical examiners, in spite of all of the bad features which many years have developed as being properly charged to the account of the medical examiner, the success of life insurance, the very corner stone of the great structures which have been reared through the fees resulting from the careful and scientific reports of well-informed medical men, is, we may say, as closely allied to the medical aspect of insurance as to all of its other features combined.

It may seem to some of the companies that a fee of five dollars for a careful examination, while not at all out of proportion as compared with the fees received by practitioners in large cities, is, on the other hand, quite out of proportion to the fees received by medical men in country districts; and yet it seems to us that, viewed simply from the selfish standpoint of an insurance company, money is saved by inciting the professional men to putting forth their best efforts on account of the slight additional fee involved in the insurance examination. If the matter be sifted, it will be seen that the fee named, which is the usual one among first-class insurance companies, is by no means incommensurate with the amount of labor and time involved in the examination. Long ago the better companies have assumed the responsibility for the fee, and made it entirely independent of the result of the examination. The effort on the part of the various companies to disassociate the agents from the medical men has met with more or less success, and yet it is by no means an unusual thing for the medical man to be approached in a number of different ways, and every effort at compulsion used, in order to influence his report on an individual case. Nobody knows this better than the companies themselves, and we must confess that in the case of such facts it was a great surprise when two of the old line insurance companies announced the reduction in their fees for medical examinations. As before said, we are glad to announce that one of these has already seen the error of its ways, and we do not doubt that the other will soon fall into line. We know of no single transaction in which so much money is involved sooner or later, in which so much responsibility is assumed, in which so much is dependent upon the integrity, ability and industry of a single man, and in spite of this so little is offered in compensation for the work.

The fact which stares the medical men in the face is simply this, that such action could never be taken by the companies were the medical men to support each other, to stand together and to refuse to accept positions under such circumstances. But this is only one of the many cases in which every day we see the necessity for concerted action on the part of the profession. We do not believe that there is any class of educated men so often at variance, to their own disadvantage be it said, so often inappreciative of results which can only be attained by unanimity, so often suicidal by taking up cudgels against their brethren because of personal pique, and so seldom apparently aware of the fact that in union there is strength.

In the City of New York perhaps the most glaring insult to the whole profession is the law which provides that no medical man shall be president of the Board of Health; whereas, if there was any provision on the subject, it should read that none but a medical man should be that

officer. Such a law could not possibly have been passed had the profession at the time taken the matter up and opposed the passage of this bill, as ought to have been done. It is a very difficult matter, when affairs have assumed a definite shape, when a bill has been passed and the law put upon the statute books, to blot out even an injustice.

It was, therefore, a source of peculiar satisfaction to us to observe the concerted action of the legally constituted societies in California, in regard to life insurance examination. May we not look forward to the day when the whole profession will join together in this effort to promote the common weal, even though some slight injustice or disaster may result to an individual.

FEES FOR PROFESSIONAL WORK.

The question in regard to fees which we have just discussed in a particular connection, suggests the question of fees in general. It is curious to see the delusion of some of our brethren in regard to fees in the East. For instance, the "St. Louis Clinique" says it is easy to keep books in New York; everything is cash and on the gold standard. So far from this being the case, we doubt very much whether the profession in any of the other cities in the Union do as much work for nothing as is done right in the City of New York. As a rule, even though the amount of work done for charity's sake is immense, the men do not complain; the special grievance is against people who are entirely inconsiderate of the physician's time; who make a great pretense in regard to their ability and expectation to pay, and then leave the medical man's bill to be collected after they are dead (they seldom die), or else stand as an unavailable asset upon a book already burdened with similar items.

The reason that the question of fees is so difficult to settle is simply this; that in a thousand cases there would be almost as many ways to decide what was best to do. We do not believe that medical men want anything more than a fair return for good work; but how to get this it is no easy matter to say. One man prefers to have a financial conversation at the outset; another is offended if the question of dollars and cents is broached; one man desires a monthly statement before it is due, but never forgives the physician for trying to comply with his desires; and so we might go on, multiplying the various attitudes of different men in regard to the question of pecuniary compensation. As a matter of fact, the very ways which would be successful in the case of one man would be far from successful in the case of another. It is, therefore, impossible to lay down a rule sufficient for all cases, and yet it does seem that medical men would not so frequently die without enough property to insure their burial, if they gave the business end of their work a fraction of the attention it deserves.

REVIEWS.

A Manual of Clinical Diagnosis by Means of the Microscope, and Chemical Methods for Students, Hospital Physicians and Practitioners; by Charles E. Simon, M.D., late Assistant Resident Physician Johns Hopkins Hospital, Baltimore; with 132 illustrations on wood, and 10 colored plates. Philadelphia and New York, Lea Bros. & Co., 1896.

If it were as easy to force upon the profession the utilization of the many means of diagnosis with which a majority are already more or less equipped, as it is difficult to acquire expert technique in the application of these methods to the practice of medicine, special books on the subject would command the support and encouragement of the whole profession. For a large number of men, the information, as it is presented in this book, would be of great value, even though they did not have at hand the facilities for following out the methods employed and suggested. To a man who is resident in a hospital, well equipped with all of the paraphernalia for scientific work, and often with the encouragement and assistance of a skilled microscopist near at hand, the failure to employ many of the means for diagnosis, if not all that are within his reach, is culpable negligence; but he will soon find after a few years of private work, that as his responsibilities increase and his time for detail work decreases, however much he may have enjoyed work of this sort, it is practically impossible to give it the same amount of attention. On the other hand, it is a most satisfactory thing to every physician to be able to personally ascertain the facts, which are often impersonally and inconsistently reported from the laboratory. To take up in an exceedingly cursory way the volume in hand, the matter is considered under thirteen headings, which in general include, in addition to the blood, the secretions and the excretions of the body and its organs. As is eminently proper, the blood, the gastric juice and the gastric contents, the sputum and the urine are considered in considerable detail; and especially is this true of the last named; indeed, the chapter on this subject is in itself worthy of being ranked with many of the separate treatises on the matter. The illustrations are abundant and good, the colored plates being especially well done. The study of the malarial parasites, indeed, the study of the blood in general, is charmingly stated. One feature of great prominence throughout the whole work is the adaptability of the text to practical work. The chapter on the secretion of the mammary glands is too brief and too concise, and does not, it seems to us, consider the

subject with sufficient fulness. However, we know of no better manual on the same lines, and the name of the publishers is a sufficient guarantee for the excellence of their part of the work.

The Ready Reference Handbook on the Diseases of the Skin; by George Thomas Jackson, M.D., with 69 illustrations. Second edition, revised and enlarged. Lea Bros. & Co., New York and Philadelphia, 1896.

When a handbook has rapidly entered upon its second edition, the presumption is that the profession has shown the kind of appreciation that justifies the labor expended. This book is exactly what it claims to be, a ready reference handbook, the diseases being arranged in alphabetical order, and the pulp of the text being devoted to a full consideration of what, to the practising physician, are the most important parts of his work, symptomatology, diagnosis and treatment. That the author is competent to challenge comparison with any of the other well-known writers on skin diseases, every one who is familiar with his work on the hair and scalp, and with his many years of successful practical work in one of the largest clinics in New York city, must readily acknowledge. The part of the work which to us is least agreeable is the illustrations by woodcuts. This may be due to the fact that we have of late years been so generously supplied by the various publishers of works on skin diseases with the very best and latest output of the lithographic art. We wish the work a continuance of the success which it has already attained and so richly deserves, and congratulate the author upon the appearance of the new edition.

Ptomaines, Leucomaines, Toxines and Antitoxines, or the chemical factors in the causation of disease; by Victor C. Vaughan, Ph.D., M.D., and Frederick G. Novy, Sc.D., M.D. Third edition, revised and enlarged. Lea Bros. & Co., Philadelphia and New York, 1896.

We notice a curious discrepancy between the impress on the cover of the book and the reading of the title page; but as the tendency of modern orthography is to eliminate all possible letters and leave out frequently the very ones which would give information as to the etiology of the word, we suppose we ought not to complain. Indeed, we would not, if the author was only consistent. We must say, though, that it looks like the refinement of cruelty to drop the e from our old friend morphine. However, this is not especially relevant to the subject matter of the book. The question of bacterial poisons is exceedingly intricate, and seems to furnish each year new fields for investigation and new grounds for abandoning some of the old principles and supposed facts which have been taught in regard to them. Almost every murder trial in which the question of poisoning is under debate, sooner or later be-

comes involved by the part which the bacteria of decomposition plays in influencing the chemical tests. A number of cases in point could be quoted, which have occupied considerable time in the courts during the past few years, and two of these demonstrated most forcibly the value of accurate knowledge on these subjects. The first mentioned author, indeed, the gentleman who was responsible, as we recall, for the first edition of the book, is one of the pioneers and masters in this branch of medical science. The importance which attaches to the subject has no better demonstration than the fact that three editions of this work have been published within eight years. The authors declare, and with good reason, "that the chemistry of disease grows in importance each year. It is now generally recognized that those diseases that cause the greatest mortality, and, consequently, are of the greatest importance, are in reality cases of poisoning. The poison may be possessed of life, and, therefore, under favorable conditions capable of indefinite increase in quantity after its introduction into the body, or it may be dead when introduced or generated in the body. The difference between the living pathogenic bacterium and the same organism deprived of life, is one of degree rather than one of kind." The work is its own sponsor, and has already earned a high standing as a valuable treatise on the subjects it considers.

Diet for the Sick. Contributed by Miss E. Hibbard, Principal of Nurses' Training School, Grace Hospital, Detroit, and Mrs. Emma Drant, Matron of Michigan College of Medicine Hospital, Detroit. Second edition enlarged. Limp cloth, 16mo., 100 pages, price 25 cents, postpaid. Detroit, Mich. The Illustrated Medical Journal Co., 1896.

In this little book there is, besides the useful formulæ for "Sick Dishes," foods and cooling drinks for convalescents, quite complete diet tables for use in anæmia, Bright's disease, calculus, cancer, chloæsis, cholera infantum, constipation, consumption, diabetes, diarrhœa, dyspepsia, fevers, gout, nervous affections, obesity, phthisis, rheumatism, uterine fibroids. It also gives various nutritive enemata. The physician can use it to advantage in explaining his orders for suitable dishes for his patient, leaving the book with the nurse.

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ORIGINAL ARTICLES.

CONCERNING THE LOCAL TREATMENT OF ACUTE CATARRHAL OTITIS.

By ADOLPH RUPP, M.D., New York.

Formerly Visiting Physician to the Northern Dispensary, and formerly Aural Surgeon to the New York Eye and Ear Infirmary.

Acute catarrhal otitis is characterized by a more or less active congestive hyperæmia of the mucous and submucous tissues lining the Eustachian tube and drum-cavity—this acute congestion develops a variable amount of effusion of a mucopurulent or sero-mucopurulent character into the substance of these tissues, causing them to become swollen, and a transudation of the same exudates beside epithelium into the drum-cavity and Eustachian tube. These inflammatory phenomena are usually an extension of the same or similar processes existing in the nose, naso-pharynx, and pharynx. Not infrequently these processes extend into the irregular sinuosities of the mastoid cells. There is no such entity as an inflammation of the middle ear, and of the middle ear only. Pathogenetic influences of various kinds (biophysiological and bacteriological), besides those of a local, mechanical nature, control the course and sequelæ of the different types of so-called acute catarrhal otitis, when treatment fails to influence them for good or evil.

The diagnosis of acute catarrhal otitis will be considerably facilitated by the intelligence of the patient. Infants and very young children often fail to direct attention to the ear, as the source of headache, earache, or a sense of heaviness on the affected side of the head. Often a discharge from the affected ear directs attention to the auditory apparatus. But, unfortunately for the patient, the "aural discharge" being often co-existent with relief of the pain and distress, this discharge is interpreted as a good sign, and prognostic of a cure, where—as it often is, when

overlooked therapeutically—it is the beginning of a series of obstinate aural maladies and complications. Not so very exceptionally, pain in the region of the brow or along the jaws, or in the temporal region, due to ear inflammation, may be so acute as to mark the seat and origin from which it is reflected. After attention has been directed to the ear by the complaints of the patient, or the surmises or suspicions of the practitioner, the only positive way to determine the diagnosis is by examining the ear with a speculum and a reflecting mirror. This implies special technical ability, knowledge, and experience, and it is not speaking severely to say that those who have not this special ability ought not to meddle with the ear when it is diseased. Nor is this all. In all cases of ear disease whatever, the nose and throat demand inspection, and interpretation in so far as conditions here influence the aural malady calling for special attention. If nose and throat inspection and treatment be overlooked when the ear is treated, the aural disease will necessarily suffer more or less in consequence. As a matter of course a local malady demands local treatment. Most general practitioners concede as much. But there are some specialists who will not admit that general or constitutional treatment is of almost equal importance—all other doctoring for local maladies than that of a local or instrumental character is laughed out of school by them, and annihilated with the word metaphysical. Men of this kind not only wittingly or unwittingly insult some of the greatest minds that have existed and exist, but they invite some of us to conclude that they have as crude a notion of physics as of metaphysics. In their enthusiasm for the crudely tangible they overlook the well marked distinction made by men of science as to mere sense and science. Allow me to quote a scientific philosopher on this question. "The distinction between the sensible and the scientific, the apparent and the real, the perceptible and the imperceptible, is not only a scientific fact, but has become a commonplace in natural philosophy not only physics, but chemistry and biology unite in the antithesis of molar and molecular motion, in recognizing, therefore, motions which are for the best part imperceptible, in resolving what seems to our senses to be heterogeneous qualities into mere varieties of imperceptible motions, and in referring these motions to particles which are as imperceptible as the motions themselves. In all these sciences the latent structures and processes of things are opposed to their external appearances, and perceptible changes. Our knowledge is not limited to sensible phenomena. We are quite as certain of the existence of that which can not be brought within our sensibility as of that which can, and of objects which we do not experience, as of objects of experience itself (Physical Realism, Thomas Case, M.A.). These are all rational facts deduced from cruder and more tangible data furnished by

our every-day experience. Analogously, one may ask, are the more hidden and subtle modes of action and resultant effects of constitutional remedies less physical than are the crude cut of the knife and its demonstrable effect on the sense of sight?

The ends sought for in the constitutional and local treatment of acute catarrhal otitis are the relief from pain, and circulatory and respiratory tension. Usually, but not always, when the tension has been diminished the pain ceases in proportion or altogether. Happily, some of the constitutional remedies work in both directions simultaneously. Notably, opium, chloral hydrate, the bromides, aconite and pulsatilla. These medicines allay irritation, diminish pain, induce general rest and sleep, and diminish arterial tension, and, consequently, venous and interstitial torpor or stagnation. All these facts are old and well established, and, utilized judiciously, in connection with the necessary local remedies, are a boon for the patient and the doctor. Besides, as grateful addenda to the treatment of earache, due to acute catarrhal otitis, are rest in bed and rest from noise. Rest in bed and rest from noises will cure not a few mild cases of acute catarrhal otitis, unaided by anodynes, internally administered, or by active local treatment. Stromeyer drew attention to the fact that pain and inflammation is much diminished in a sore finger when the patient is put to bed. Much more effective is bed rest in cases of aural inflammation, because the ear is so intimately related to the organs of tension, the heart and lungs. But in such mild cases we must be guided by our physical inspections of the ear, nose, and throat, and not trust too much to the subjective comfort of our patients. Our local remedies do the same that our constitutional medicaments mean to do, namely, relieve pain, diminish tissue tension (locally though), and thus secure comfort for the patient, and diminish or prevent the destructive tissue changes which jeopardize the usefulness of this so-called middle-ear in the services of good or normal hearing. Besides, local treatment, in a fuller measure than can be granted to constitutional or general treatment, seeks to prevent serious complications of a local character, such as suppurative mastoiditis, infective sinus thrombosis, meningitis, and in a far-away sort of manner, abscesses of the brain. Pain and tension may be diminished by means of dry and moist heat; whether the one or the other be chosen will depend on the nature of the case and the tastes and judgment of the practitioner. The instillation of anodynes into the canal are of little value; they are momentarily agreeable to the patient, but are not curative. Heat over the mastoid region, and in front of and over the ear, do good, and are more effective than drops into the ear canal. Oils and fats ought not to be dropped into the ear; they become rancid, and have a tendency to clog up the canal as they become cool. Dry heat ap-

plied to the aural region may suffice at the beginning of an otitis and in mild cases; but moist heat is more satisfactory in severer cases. Some have claimed that moist heat increases the tendency to perforation of the membrana tympani. This is as difficult to prove as it is to demonstrate the contrary. Properly used, moist heat is very agreeable to an otitic patient, and it can easily be handled so as not to be either dirty or harmful. The auditory canal should, as far as is possible, be kept aseptic. Warm boric acid instillations are useful. Here, too, habit will control choice in the selection of antiseptics. Where heat is used as a remedy, the application of cold is also resorted to. As to this remedy no rule can be laid down as infallible. In many cases the patient decides the matter, and sometimes contrary to the practitioner's directions, with advantage to his comfort and the future course of the malady. But cold poured into the aural canal is decidedly uncomfortable and even painful.

Wet cupping over the mastoid region is of benefit in severe cases. The application of leeches around the ear is beneficial; the amount and localization of blood abstraction can be conveniently graded. Complications due to leeching are rare, and their dangerousness has probably been overestimated. I have never seen any untoward results follow their use. Blistering is no doubt better after acute symptoms and signs have subsided than in the early stages of inflammation. Blisters and counter irritants seem to hasten a receding exudation, and have little beneficial influence on an invading exudation. Such is my experience.

When the drum cavity is full, and the drumhead stands flat, or bulges, it should be perforated, to relieve not only intratympanal but mastoid tension, and make drainage from the drum cavity and mastoid antrum and cells possible. In the early stages of acute catarrhal otitis the small quantities of fluids which may have gathered in the drum cavity may be aspirated through the Eustachian tube with advantage to the patient and the disease processes; but larger quantities demand constant drainage, which is best attained through an opening made in the lower portion of the posterior half of the membrana tympani.

If, after the membrana tympani has become perforated (by the knife of the practitioner, or in the course of the disease spontaneously), and the pain in the ear persists unabated or becomes aggravated, and if the walls of the external auditory canal are red, tender, and swollen, in connection with the same state of affairs over the mastoid region, even if the otorrhœa be not profuse, and there be symptoms of septic infection—fever and chills, etc.—then the mastoid cells should be opened and drained. Severe cases of this kind have all their signs and symptoms aggravated by ordinary exercise on the part of the patient. Opening the mastoid cells does at least three things: 1, relieves bone tension

of the mastoid region; 2, drains the mastoid cells more or less thoroughly, besides to a certain extent preventing the inflammation to extend to the brain and sinuses; 3, often drains the tympanum when the hole in the drumhead fails to do so sufficiently.

Having done all these things directly to the ear, besides having kept any coexistent inflammation of the nose and throat under control, we have done nearly all that our art teaches us to do in attaining desirable results in cases of acute catarrhal otitis. Two things remain to be mentioned, namely, the relief of local respiratory tension, and the utility of politzerization.

It is a well-known fact that when the nasal passages are obstructed the parts back of the point of obstruction will become the victims of increased tension and circulatory disturbance, which results in swelling and hypertrophy. Acute catarrhal otitis being almost without exception secondary to an obstructive nasal inflammation, and the Eustachian tube and the drum cavity being back of the point of obstruction, both suffer from this form of what may be called local respiratory tension. This factor acts deleteriously, in two ways, on the tissues lining the walls of the middle ear; first, by aggravating the inflammatory swelling and tension, and secondly, by narrowing the lumen of the drum cavity and the Eustachian tube, the transuded seromucous and mucopus impinge with increasing destructive force on the membranes of the middle ear and against the round and oval windows leading into the inner ear—in such a case the fluid cannot escape through the obstructed Eustachian tube. This condition of affairs explains why a perforation of the drum is almost always followed by so much relief from local pressure pain, and headache, dizziness and so on. This state of affairs also demonstrates the importance of keeping the nasal and pharyngeal tracts as clear as possible whilst treating the ear. No aural condition can be satisfactorily treated without taking the nose and throat also in account.

When in mild cases of catarrhal otitis the tympanum has been almost exhausted of its air, and the transudation into the tympanum is slight, then gentle politzerization can do good by relieving the mild amount of tension that has been established by local respiratory aspiration pressure, and besides the reparative process may be aided thereby too. Some have objected to politzerizing at all when the tympanum is inflamed, for fear of forcing in noxious bacteria. That danger, according to my experience, is nil in comparison to the advantages gained by judicious politzerization. When the tympanum contains fluid enough to press the membrana tympani outwards then politzerization can do no good, but may do some harm. After the membrana tympani has become perforated, politzerization may do some good by forcing open

the Eustachian tube, thus relieving that tube of local respiratory aspiration pressure; and, besides, helps to clear the middle ear of viscid transudations.

To conclude: Treatment of this malady—acute otitis media—aims at realizing three results:

1—Relief from pain.

2—The prevention of untoward complications and sequelæ; and all this is effected by

3—Relieving inflammatory tension, primarily

In the attainment of these ends both constitutional and local remedies must be resorted to. In severe cases, and during the later stages of many cases, the local remedies are of more benefit than medicines internally administered, because they answer to the call of the conditions to be remedied more directly and quickly. Not a few cases get well by internal medication and rest. No doubt some get well without any treatment. But, by whatever means they get well, unseen and impalpable factors do the real work of which we see only the finished results. And there is as little metaphysics about the use of opium and other anodynes as there is about the use of the knife, cupping, and leeching. All that we do, and all that we see result, is purely physical in the broadest sense of the term.

SOME SALIENT POINTS FROM NOTES OF A COMPLICATED CASE OF GANGRENE IN THE RIGHT LUNG.

By EDGAR W. ROBERTSON, M.D., Onancock, Va.

At night, November 5, 1895, I was called to H. F., aged eighteen years, with a narrative of abdominal pain, and the only alleged error in diet, was the eating of a frosted potato. Treatment, hypodermic (morphia, atropia) calomel, P. Div. and Ipecac Triturates, by mouth. (To be heard from.)

6th. Recalled, and essayed free alvine passage by (rectal) saline injections. Morphia and quinine.

By 7th these points prominent:

Severe pains, paroxysmal and tenderness, constant, over right iliac region, or to the right of the navel (chiefly), with fever, anorexia, constipated bowels and hardness.

By 6 P. M. (8th), had "colic"—belching to-day. Later: Severe pain in his arm and shoulder. At this time chief pain is right—lumbo—iliac (region), just opposite anterior superior spinous proc. of ilium. Has taken four of the morphia, etc., tablets. Inject (hypodermically) morphia, atropia, and hyoscine hydrobromate. His abdomen is hard, tender, very tympanitic, general resonance up to the ribs, but an area of decided comparative dullness over right iliac fossa (for I examined care-

fully). My diagnosis: Typhlitis and perityphlitis—Peritonitis, local, extending.

6.40. Loud breathing in sleep. Discontinued morphia. Continued poultices. Temp., 101° F.

9th. Between 8 and 9 A.M.; P., 96; temp., 100° F. Slept fairly well. Morphia at 1, 2, 4, and 6; none since. His belly is certainly softer. Gave quinine. Morphia, etc., from 1 to 2 hour intervals—to keep down pain.

3 P. M. As I entered the hall, detected fæcal odor, for he had had a passage. He says he's better; and the family says he's better. Painless, and very little on pressure; and I find that where there was dullness last night there is resonance now, and it may be a fæcal impaction has passed. P., 108; temp., 101° F. Cephalalgia.

10th. "Better." Two spells of normal sleep in the night. Taken less of the morphia. Had six or seven operations. No pain. Belly everywhere tympanitic or resonant, but flatter and no dull area. My diagnosis: Typhlitis and firm fæcal impaction; and, perhaps, peritonitis following, with (now) signs of resolution (?). Pulse, 80-90. "Talks," possibly from the atropia and morphia; dreamy hallucinations, something like a typhoid fever patient.

His mother makes this statement: He insists that it was a frozen, frosted potato, the cause of the attack (he said it was frozen; frost-bitten, I think), eaten Tuesday morning, giving him pains, but he went on to school, and it was that night of Tuesday, 5th, I was sent for.

"Whose bicycle?" he asks, but, addressing him and inquiring if asleep, he immediately answered me naturally. His mother says: "That's the way he was going on all night."

By 14th, decide case is now typhoid fever, and by December 8th, pneumonitis. It's not likely this pneumonic complication has existed long, for he has shown no chest trouble till very lately; the cough recorded first on Saturday, 7th.

January 15, 1896. Dr. Leatherbury met me in the case. We perceived the very offensive sputum, and the doctor mentioned possibility of lung tissue breaking up.

18th. Perceived three or four transverse, dull, red lines in (lower) dorsal region, an inch or so beyond spine, each side, and fades on pressure.

25th. Dr. L. met me again. The doctor examined this right lung, and failed to find "any vesicular murmur," which was in accordance with my opinion.

30th. Sputa very offensive.

31st. Eats more, and discovered an approach to a vesicular murmur for right lung back. Later on, some anasarca (kidneys not involved).

February 5th. Has had two or three syncopic attacks. Ther., 99° , and seems to be enjoying the eating of fresh-water perch. Heart sounds normal.

7th. I tell his father I think it probable a part of that lung has mortified. Dr. L. concurs with me that it is most probably gangrene of lung. The case continued mainly the same on an average, showing the œdema, but extreme emaciation of upper part of the limbs and body, up to about March 6, when he coughed up this piece of lung. (Photograph shows.)

11th. Taking on flesh. Pulse, 108 or more. Temp., 99° F. Less pains. Less cough. Takes nourishment—chicken, potatoes, lemonade. He's wayward about his diet, but for a long time has eaten daily a fried



chicken, etc. Lessened the morphia, which had been required for pains, sometimes migratory.

21st. Taking on flesh.

28th. Symptoms are improving. No cough, and as for sputa, they say: "The last he spit up you took with you."

Ordered syr: iod: iron. His diet is anything now, and can "lie down and sleep—stretch his legs out—still he hasn't walked." (I omitted to note that for a long time he occupied this position: Lies with his head between his legs; body bent over—forward between legs; thighs and arms flexed; neck curved over by pendant head. This was from note of 26th of January, 1896.)

April. Saw his father to-day, 3d, who thinks he has an uninterrupted convalescence. Sitting up and making bird houses. Received

to-day a reply from Dr. Wm. Osler, of Johns-Hopkins', to my letter in reference to one of the photographs sent of the piece of exfoliated lung, etc., as follows:

BALTIMORE, April 2, 1896.

DEAR DR. ROBERTSON:

Pardon the delay in answering your letter, but I have been unusually busy. The photograph is extremely interesting. The specimen itself has not yet been examined for tubercle bacilli. I will let you know when the examination is completed.

Sincerely yours,

WM. OSLER.



September 29th, 1896. This young man has recuperated, even beyond his former state, possibly. I saw him a few days ago, and have seen him repeatedly, and know that, to all appearances, health has been regained, for it's been nearly six months now since the expectoration of lung tissue, and eleven since the incipency of case.

TRANSLATION.

CHEMICAL DEMORPHINISATION.

Translated for Gaillard's Medical Journal,

By H. McS. GAMBLE, Ph.D., M.D.,

Moorefield, W. Va.

It is but a short time since the difference of opinion upon the best method of demorphinisation, regarded only the duration of the period of weaning. Some authors pursued the slow method; others were enthusiastic over the rapid method, and it is, in fact, the latter—that which I have recommended—that, in skillful hands, yields, without doubt, the best results.

Dr. Paul Sollier has quite recently had read, at the Academy of Medicine, a work of the highest interest, in which he furnishes information upon the excellent results which he has obtained in fifty-seven cases with this rapid method (Erlenmeyer method).

Nearly three years ago I abandoned this method for another, which gives me better results. I published it, in 1894, in the *Therapeutic Manual*, of Penfold and Stintzing.

At the time of a visit, which, early in April, Dr. Sollier made to the establishment of Bendorf (Rhin), of which I have the medical direction, I discovered that this new method had remained unknown to my French colleagues; I hasten to lay it before them.

It is, if we wish to give it a short denomination, a chemical method, which has no relation either to the duration of the treatment or to the more or less rapid diminution of the usual dose of morphine.

The clinical estimation of certain symptoms of suppression would lead to a certain resemblance between these symptoms and those of hyperacid dyspepsia. We find in both instances not only the direct gastric symptoms, such as intestinal pressure and pain, a desire to vomit, vomiting, diarrhoea, and numerous stools; but we remark also the indirect symptoms of a sensation of heat in the back, restlessness of the limbs and of the body, painful impressions in the legs. We were led from that moment to inquire if there did not exist in the stomach, at the time of the suppression of the morphine, the same chemical alteration that is found in hyperacid dyspepsia, that is to say, a surplus of hydrochloric acid. These suppositions are in effect realized. At the time of the demorphinisation, when the patient no longer receives any or but very lit-

the morphine, and when the symptoms of withdrawal are the most violent, there has been found a considerable excess of hydrochloric acid upon sounding the stomach.

This gastric condition determined, it was necessary to seek for the cause, which was not difficult to find.

Marmé, Stolnikow and Rosenthal have demonstrated that a portion of the morphine injected under the skin is carried into the stomach, and Alt, who has repeated these experiments, has succeeded in proving that the portion which reaches the stomach is nearly half of the amount injected. It is likewise Alt who has found that this elimination into the stomach commences a few minutes after the subcutaneous injection.

The consideration of this chemical action has led to the following reflections: In a person accustomed to taking subcutaneous injections, the morphine penetrates into the stomach, and, in traversing the walls, it produces a morphinisation of the secretory glands. It must be remarked that this narcotic state of the glandules becomes nearly permanent, for, among habitués, the injections are frequently repeated, ten, twenty times, and even oftener, during the day, and that often for years. Consequently, the narcotized glandules ceasing their functions, that is to say, no longer producing hydrochloric acid, there results an anacid condition of the stomach during the period of demorphinisation. The absence of the acid is not without influence upon the gastric nerves, which, in the normal state, are accustomed to it. Besides, these nerves are exposed to local narcotisation, and one easily understands that they cease to perform their functions under the influence of these two agents.

What will happen after the suppression, when the patient will receive no more, or, but very little morphine? Naturally, the contrary of the state that I have above mentioned. The narcotic state of the secretory glandules is diminished in proportion to the diminution of the morphine, the glandules arouse from their morphinic sleep, resume their functions, and, completely liberated from morphine, produce a veritable inundation of hydrochloric acid. These floods of acid, upon being discharged upon the nerves, create in them an extraordinary irritation, the result of which is a local disturbance (gastric) and a general one, to wit, the so-called symptoms of suppression: vomiting, pain in the abdomen, colic, hot flushes and pain along the back, uneasiness of the limbs and of the trunk, insomnia, acceleration of the pulse. It is needless to say that the nervous symptoms—outside of the gastric symptoms—are reflex effects, primarily produced by the irritation of the gastric nerves, then by the propagation of this irritation upon the other parts of the nervous system. If these data are admitted, it is not hard to find a rational treatment.

It was Hitzig, who, under the influence of these considerations, made the first trial of it. In the case of a patient, at the moment of the sup-

pression, he emptied the stomach for several days by means of the pump, thus causing the hydrochloric acid to disappear, and therein introduced some alkaline water (he made use of Carlsbad water), in order to neutralize any acid that might remain. The very interesting result of this procedure was that the patient was exempt, if not entirely at least in part, from the symptoms which in Germany we call "symptoms of abstinence." He had neither local gastric symptoms, nor general, or reflex symptoms, and, above all, he had neither flushes of heat, nor pains in the back, nor disturbances and pains in the legs. This patient having already gone through several attempts at weaning, was able to establish a comparison between his different methods of suppression. His opinion was that the latter, that is to say, the chemical method, was without question the best, the easiest to bear, and caused no grave symptoms.

It is certain that the evacuation of the stomach by means of the sound is not an agreeable procedure, and that patients at the time of the withdrawal, a time when they are in all cases nervous, cannot support the inconveniences of it. It is for this reason that, abandoning this mode of treatment, I made trial of a local neutralization of the hydrochloric acid. I can say that I have succeeded. I employed the water of Fachingen, which contains a large quantity of bicarbonate of soda, and I directed at least a litre a day to be taken. The effect of this medication was most unexpected; neither vomiting, nor colic, and instead of diarrhœa, which in the cases treated before this time caused great distress, there was constipation. As to the reflex nervous symptoms, either there were none, or they were of such a mild nature that the patients did not suffer from them.

It is in this way that, within about three years, I have treated more than thirty patients, and I must say that these cures were incomparably more easily accomplished than those I had undertaken the preceding years. Yet the desire for morphine, a pscopathic symptom that in France is designated by the name of "morphomania," persisted under this method. It was then interesting to observe how patients, who, morphomaniacs for more than ten or twenty years, suffered almost none at all during the withdrawal, manifested such a morbid desire for morphine that, like maniacs, they demanded it with loud cries.

When one wishes, resting upon the chemical considerations that I have omitted above, to try an absolutely systematic treatment, I suggest administering hydrochloric acid during the period of demorphinisation. Thus will be avoided the anacidity of the stomach and be preserved to the gastric nerves the usage of the acid.

It is, the first time, I believe, that any one has recommended in France a method tending to demorphinisation according to chemical principles, and I do not doubt that this treatment will be that of the future.

Every discussion upon the more or less rapid demorphinisation is but a subterfuge to conceal our ignorance upon the march of morphine in our organism. We know, in effect, neither the products of its chemical transformation, nor the physiological effect of these products upon the organism, and the task of the future is to make them known.

If we shall succeed we will have the true method of demorphinisation. To contribute to this is the aim of this modest effort.

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SELECTIONS.

ADDRESS IN MEDICINE.

Delivered at the Annual Meeting of the British Medical Association, held at Carlisle, July, 1896.

By SIR DYCE DUCKWORTH, M.D., LL.D., EDIN., F.R.C.P., LOND.,
Physician and Lecturer on Medicine, St. Bartholomew's Hospital; Honorary
Physician to H. R. H. the Prince of Wales.

THE PROGNOSIS OF DISEASE.

INTRODUCTION: THE IMPORTANCE OF THE SUBJECT.

GENTLEMEN:—I venture to state that at the present time, and for many years past, in spite of the extraordinary advances made in all branches of the sciences on which medicine depends, in spite, too, of the high degree of cultivation to which the art of medicine has attained in the last years of this century, the attention of physicians has been somewhat inadequately directed to the subject of prognosis in disease. Our minds have been much, probably too exclusively, intent on acquiring accurate knowledge of facts, and we are now encumbered with a mass of details and microscopic minutiae so large and so pressing that few among us have had time for a meditative survey of them in order to apprehend the great general laws which underlie and govern them. Our views are thus apt to be narrow and distorted; we argue too much from the particular; we fail to see things in due proportion, and so less seldom than we might have a right judgment in things medical. If this is true for us as active practitioners, how much worse is the case for the modern student of medicine? The education of to-day is perhaps rather over-laden with details and somewhat barren of the inculcation of general principles, hence I fear we may come short in the production of men properly equipped to think for themselves, and to help in carrying forward our art towards greater completeness and perfection. We must, if we are to be great in medicine, sometimes lift our eyes from the microscope and away from the engrossing researches of the laboratories, and, rising to a higher plat-

form, survey the larger fields and vistas which lie before and beyond us. If we do so, we shall certainly come to know more of the inwardness and due proportions of matters which relate to the life of man as he passes through his present environment. We need both the talent of the ancient philosophers, who had an eye for general truth, and the qualities of the modern philosopher, whose eyes are so much set on particular facts. The problem now before our profession is to combine these in due harmony, and as I have expressed the opinion that we have somewhat failed in modern times to gather knowledge as did the ancients, I purpose to address myself in this prelection to a much neglected subject, that of prognosis¹ in medicine, considered by the light of our most recent attainments. This study takes us back at once to the great Father of Medicine, our supreme guide in this matter, who laid an enduring foundation for us 2,000 years ago in his splendid treatises on the prognostics.²

HISTORICAL.

In recent times the literature relating to Prognostics has been far to seek. I know of no work purely relating to the subject which has been published in this century.³ The most remarkable book on Prognostics is that of Prosper Alpinus,⁴ a professor of medicine at Padua, who published his famous treatise in confirmation of the Hippocratic method, in 1601, and an edition of which was issued at Leyden, with a preface by Boerhaave, in 1709. I am indebted to Dr. Munk for an acquaintance with these volumes, and no less for his kindness in handing to me for perusal the manuscript of his own unpublished oration on prognosis, delivered before the Hunterian Society, of London, in 1858. From the latter I have learned how the study of Prognostics came to be disregarded toward the close of the last century. "Coincidentally with the return from the polluted stream of Arabian medicine to the pure fountain of Grecian physic was the renewed cultivation of a rational and scientific prognosis.

. . . It was in connection with a humoral pathology that prognosis made the greatest progress and achieved its highest triumphs. . . . The doctrines of solidism, on the other hand, have uniformly proved inimical to the study of prognosis. . . . Prognosis was but little regarded by Hoffman and still less by Cullen. To the neglect it experienced from the luminary of the Edinburgh school its decadence in this country is to be attributed. The pupils of Boerhaave and of the school over which his name and example continued to shed luster, were still cultivating prognosis in all its minutiae, and applying its rules with startling accuracy at the very time when Cullen's genius blazed above the medical horizon; and it was not until these had died off and Edinburgh had taken that place in public estimation as a medical school which Leyden had previously enjoyed that the regular, minute and systematic study of a

rational prognosis became extinct in this country." I think that a just consideration of the prevailing doctrines of pathology at the present time may encourage us to hope that renewed attention and study may henceforth be directed to the subject of Prognostics. The exactness and precision of modern biological inquiry may fairly incite us to fresh research in this direction, and I think we have already some indications that such is likely to prove fruitful and profitable.

Thirty years ago the lamented late President of this Association, in his introduction to his "System of Medicine,"⁵ declared that "the practical test of a true science is the power which it confers of 'prevision' or of knowing now what will follow hereafter. . . . When we can prognosticate with certainty medicine will have become a science. At present we only with different degrees of nearness approach this end. We may describe the 'probabilities' of a given disease, we may even measure them, we may accept or reject lives at insurance offices, or we may affix a numerical value to their duration; but we deal with doubts and not with certainties. Life is too subtle for us to measure all its possible contingencies." He further indicated that "in prognosis we have always two ends to be considered—the immediate effects of the present illness and its remote consequences upon life. The former turns upon the degree to which great vital functions are interfered with; the latter depends upon the nature of slighter changes, of which pathology teaches us the meaning." After this interval of time it is of interest to note what the writer of the "System of Medicine"⁶ just published has to state in respect of Prognostics: "As observation becomes more accurate, as the number of observed cases increases, and as classes are better and better distinguished, the nearer will the physician be able to approach an accurate prognosis, though the time when any sufficient rule can be applied to individual cases must long be out of our sight; and the application of any approximate rules must long be subordinate to the instinctive tact of the educated physician himself, who alone can apprehend the sum of the peculiarities which must modify their application to individual instances."

We have here the views of two careful and experienced physicians, and a consideration of their opinions might well make one hesitate a little before embarking on a task such as I have set before me. I feel, however, that such an effort is called for, and the duty of making it is one which may rightly be claimed from those who have had long and chastening experience of practice both in public and private; I feel encouraged in making the attempt by the thought that I may thus induce others to follow me in affording such knowledge as they may have in respect of matters relating to Prognostics. It is certain that we can only make advances in prognostic skill by careful and patient study of the whole subject of semeiology, and on few parts of our art has greater light been shed

during the last half-century than on this. We cultivate the study of semeiology for three reasons: First, to enable us to make a diagnosis; secondly, to direct the treatment of the case, and, thirdly, to help us to frame a prognosis. Everything, therefore, depends on an accurate appreciation of the symptoms and the physical signs presented to us in any case. If we err at the outset our treatment and our prognosis will also err. As I have just said, there is assuredly no lack of teaching in these days directed to the subject of semeiology in its several parts; but I think it must be conceded that our eyes and our minds are rather apt in consequence to dwell too much on our detailed notes and our manifold instrumental aids and too little on the patient, his personal peculiarities, and the intimate nature of his ailments. We thus miss the due recognition of noteworthy features proper to the case—features often eloquent and provocative of further inquiry when appreciated by the trained eye and the open mind accustomed to view the whole and not merely a part, and thus to see every point in due proportion and in proper relation to the rest.

PROGNOSIS AND PHYSIOGNOMY.

This difficulty meets us not seldom in respect of estimating the value of lives for the purpose of assurance. We have now to fill in a long schedule with a cumbrous mass of details, and a few minutes to do it in. The tendency is to be so engrossed in gathering such a number of facts that there is little time left for a review of them in the presence of the candidate, and it sometimes happens in my experience that the conclusions formed on reading through the document not seldom inadequately express the value of the life thus examined. The organs may be found in detail free from evidence of organic disease, but there may be appearances and features indicative of progressive failure not yet registrable by the stethoscope or the tube of which the significance is of the last importance, and these may escape recognition and appraisal. The examiner is too busy with pen and ink and instruments to gauge the real inwardness and pregnant points of the case. A little more attention to the individual, his aspect, his gait, and his manner, would sometimes be well repaid in a sounder appreciation of his life value. And the same holds good in daily medical practice. I am constantly training students to begin by looking at their patients. The first thing they commonly attempt is to percuss or to auscultate the chest. I try to make them form an opinion of the case by mere inspection, without asking a single question; to guess the age, occupation, habit of body, and tendencies. Having done this, they proceed to verify or correct their primary impressions, and this is a most wholesome method. It occupies much time, but the time is well spent and the value of it in after-life must be considerable. In semeiology the order is: First, symptoms, and, secondly, physical signs. Then comes the consideration of their relation to the whole case, and with this we have the

indications for rational treatment. No two cases being alike, we have always to keep an open mind and have regard to what disease means to the particular individual before us, to consider how he is likely to bear it and to come through it, the personal factor being accurately considered in each case. Bearing in mind these points, and paying attention to the diathetic tendencies and the peculiar environments of each patient, we are then, and only then, in a position to frame a prognosis respecting his malady. And no less is attention necessary to discover, both in health and in disease, such indications as may be discovered from the physiognomy of each individual. Having had the good fortune, which I think may possibly have been shared by not a few of my present hearers, to have been trained in this study by my late preceptor (Professor Laycock of Edinburgh), I may declare here and now that I have constantly had occasion to appreciate the great value of it in aiding me in respect of both diagnosis and prognosis. This is a closed chapter of medicine to many, as I well know, but its study will well repay diligent attention to it and prove sometimes of singular value in practice. By itself this method is, of course, insufficient, but supported by careful physical examination, which corrects or confirms the primary impressions, it comes to the aid of the physician in no small degree, and puts him not seldom promptly on the track of morbid action or of degenerative processes. And in like manner, in the course of acute or chronic diseases, careful and trained observation detects signs and phases which, if duly noted and considered, may greatly help in framing a prognosis of the particular case before us.

A study of the Prognostics as laid down by Hippocrates is useful to every practitioner of medicine and must always be so. It is difficult to be certain of the nature of some of the diseases to which he alludes, and sometimes in the case of those about whose nature there can be little doubt, modern experience forbids our entire agreement with the great master. To take one example (*phthisis ab hæmoptoë*), a question once much debated in the schools, has quite lost its force for us to-day, since we have ceased to believe that simple hæmorrhage into the pulmonary parenchyma can induce *phthisis* in the absence of the specific tubercle bacilli of Koch, and have instead accepted the view that the primary feature in the case is the malignant work of these parasitic microbes, with, as a secondary result, the hæmoptysis. It would prove an impossible task to attempt within the compass of this address anything like a complete study of Prognostics as applied to all the diseases of which we have definite knowledge. I propose, therefore, in order to be methodical, to discuss the subject in relation to diseases generally of the several systems of the body, and I shall endeavor to be concise without being tedious.

ACUTE SPECIFIC DISEASES.

Taking first the large section of specific infectious diseases, I will mention some points in relation to enteric fever. Hyperpyrexia is only of grave import when rebellious to ordinary cooling methods, and among these I do not include the use of cold baths. Obese and elderly patients are bad subjects for all fevers and acute diseases. The existence of chronic renal disease is incompatible with recovery from the continued fevers. Meteorism, delirium, subsultus tendinum, and tremor are always of serious import, indicating failure of nervous power. The presence of cardiac valvular disease adds largely to the danger. Carphology is, as declared by Hippocrates,⁸ commonly a fatal sign, but I have known it persist for three or four days in a bad case and good recovery follow.⁹ Early hæmorrhage is unimportant. Dicrotism of the pulse often precedes late hæmorrhage. This condition of the pulse signifies exhaustion and deep ulceration of the bowel. The more profuse the hæmorrhage the greater the danger; moderate hæmorrhage is rarely harmful. Vomiting in the third week may be the precursor of peritonitis. Epistaxis is always a grave complication, and abortion is common. I attended one case, however, in which the patient was six months advanced in pregnancy, and she made a good recovery and had a child born at term. An abundant eruption of papules does not denote any special gravity, and, per contra, absence of eruption certainly affords no ground for belief that the case is a mild one. Excessive diarrhœa is unfavorable. Perspirations, apart from other severe indications of weakness, are not important.

In the case of typhus fever we find cause for concern if there be a very copious eruption, especially of petechial character. Severe headache, delirium and stupor, insomnia, strabismus, extreme myosis, epistaxis, subsultus tendinum, carphology, incoercible hiccough, tympanites, and retention of urine are always grave. Early epistaxis is an unfavorable symptom. Coma vigil is always a fatal symptom. Nephritis, bronchitis, pneumonia, and parotid bubo are all of ill omen. Abortion rarely ensues in pregnant women with typhus fever. A presentiment of a fatal issue at the outset of a case is commonly a bad sign. Typhus fever is uniformly fatal to persons the subject of Bright's disease and very dangerous after the age of fifty years. The malignant varieties of the exanthemata and of diphtheria admit only of varieties of the worst prognosis at any age and under all conditions. The subjects of congenital heart disease are especially bad subjects for most of the exanthemata, and for scarlet fever in particular. The same is true, too, frequently for persons suffering from cardiac valvular disease, and the continued fevers are very dangerous for them. I have, however, recorded two cases of aortic reflux in which recovery occurred respectively after severe enterica and diphtheria.¹⁰

Prognosis is graver in the exanthemata according to the early age of the patient and the abundance of the eruption. High fever, delirium, hæmorrhages, membranous angina, laryngitis, and parotid bubo are of evil augury in scarlet fever, likewise suppression of urine from intense toxic glomerular nephritis. According to Kanthack and Sevestre, a high leucocytosis in scarlet fever indicates a pronounced reaction against a severe infection; a slight leucocytosis usually indicates a mild infection. The prognosis in the milder forms of scarlatinal polyarthrititis is good. Purulent arthritis is almost uniformly fatal unless confined ultimately to one joint. Measles is oftener a severer ordeal for adults than for children. Capillary bronchitis and collapse of large tracts of the lungs constitute the worst symptoms in measles as met with in children. Our recent experiences of influenza have taught us the special dangers of the peculiar pneumonia of that malady in the case of persons past middle life and of the grave cardiac asthenia that may long persist. The prognosis in cases of diphtheria is certainly less serious now than was the case five-and-twenty years since. We note the exceptional danger for children under two years of age. Early tracheotomy with aseptic treatment and intelligent nursing has alone saved myriads of lives that would certainly have been lost in my student days. Antitoxin treatment has decidedly, in my experience, proved of additional value in diminishing the death-rate. With all this we must yet accept Sir W. Jenner's dictum that "no case of diphtheria is unattended by danger." If a week elapses without laryngeal complications we may fairly hope that the larynx may escape invasion by membrane. After this our anxiety relates to the welfare of the heart and of the nervous power of the patient. The spreading specific neuritis with its varied symptoms constitutes a danger sometimes little short of that induced by laryngitis. Nasal diphtheria should always excite concern. A rapid and feeble pulse or an infrequent pulse are bad signs in any case. Vomiting is of evil augury, especially if rebellious. Epistaxis or other hæmorrhages indicate a grave case owing to profound systemic poisoning, inducing what the old physicians called "a dissolved state of the blood" in which diapedesis occurs. Albuminuria in small degree is almost the rule in every case and is hardly to be seriously considered unless it is in large amount and uræmic symptoms supervene. It is not unlikely that there may be a conjoint impregnation in some of the latter cases with scarlatinal poison. Delirium in diphtheria is always a bad sign. There is more risk of serious symptoms due to systemic intoxication in the adult and more danger from laryngeal infection in the child.

According to Kanthack and Lloyd well-marked leucocytosis gradually falling, together with decline of temperature, indicates a good reaction and justifies a favorable prognosis. Low leucocytosis, or absence of this, with fever is a bad sign. High leucocytosis, with sub-normal tem-

perature, is also of bad augury. Other observers, however, are not in agreement on these points.¹¹ The question of leucocytosis as an element in prognosis will come before us again in relation to some other diseases.

If variola attacks persons with Bright's disease, a fatal issue is certain. The eleventh or twelfth days are the most critical, and laryngeal or pulmonary complications the most fatal. Erysipelas is likely to prove fatal if it sets in with severe constitutional disturbances and vomiting, especially in the aged and in previously intemperate persons. Phlegmonous erysipelas of the head is most grave and often fatal. In the newborn, if the navel is attacked a fatal issue is common. The toxin of erysipelas is deadly to the parturient woman, as was pointed out by Hippocrates.¹² In yellow fever an early high temperature is to be regarded as grave. Black vomit is not necessarily of fatal omen, but suppression of urine, delirium, convulsions, and coma almost certainly preclude hope of recovery.

Tetanus.—The teachings of Hippocrates holds good to this day in respect of the commonly fatal issue of "spasm supervening on a wound," and no less as to the better prognosis which may be framed in a case that has survived the spastic condition for some days. Rapid onset of spasm after injury, that is short incubative period, is more grave than slow or gradual onset of symptoms. The outlook is serious after abortion or during the parturient condition. The chance of recovery increases with each day of the prolongation of the disease, but the danger is great till the second week is passed. Death may occur a month after the onset of symptoms. The outlook is better if the spasms are confined to the jaw and the muscles of the neck and do not involve the trunk and limbs, also if they are neither severe nor frequent.¹³ (I might venture here to affirm that smart purgation in these cases is perhaps not sufficiently practised.) The disease is more deadly amongst dark-skinned races. Our experience of specific antitoxin treatment is as yet insufficient to enable us to form a decided opinion of its value, but it appears to be encouraging.

CHRONIC INFECTIOUS DISEASES.

Syphilis.—The prognostics respecting this disease relate largely to individual peculiarities, habits, and environment, to the adequacy of treatment, and the degree and virulence of primary impregnation. It is certain that the greater number of persons so infected ultimately recover satisfactorily if they have been properly treated from the outset. It is equally certain that the character of the primary lesion does not enable us to prognosticate the ultimate evolution of the malady. Death is extremely rare in the second stage. Tertiary symptoms occur in about ten per cent. of all cases, and in but few of these are vital organs affected. They may be met within the third year, but some of the latest manifesta-

tions may be active half a century after primary infection. Many of these yield to vigorous treatment. In visceral syphilis death generally occurs under forty years of age. Cardiac syphiloma usually kills at the fifth climacteric. Syphilis acquired after the seventh climacteric is always more grave than in young adults, organic degenerative changes having generally begun by that time, and the prognosis in these cases is unfavorable. A graver prognosis attaches to the disease in the lower classes, who are often inadequately treated, and who are carelessly exposed to hardships and intemperance in alcohol. Recent malarial impregnation and recent syphilis, with splenic enlargement, together form a very serious combination, and a fatal issue is common within twelve months in such cases.

Pyæmia and septicæmia.—If organisms be present in the blood of the patient and capable of cultivation from it, the prognosis, according to Kanthack, is bad. Prognosis in relation to tuberculosis is a large question. The factors on which determination has to be made vary greatly with the individual and his environment. Without doubt the prognosis of all disorders of a tuberculous nature admits of a more hopeful view at the present time than formerly. Rational treatment following on exact pathology explains why this is so. The tissue resistance of the individual counts for much. Hughes Bennett taught, and I think correctly, that no disease was so often recovered from as tuberculosis. Peritoneal tuberculosis often ends favorably. Cerebro-spinal (meningeal) tuberculosis is the most deadly of all forms, and but rarely is survived.¹⁴ The genito-urinary forms of tuberculosis are all of grave import. General miliary tuberculosis, a veritable endanthen, is as fatal as any malignant disease of which we have knowledge. The phases of ordinary pulmonary phthisis vary according to the tissue resistance and proclivities of the individual. Without doubt a gouty habit of body tends to inhibit and retard tuberculous processes.¹⁵ Valvular heart disease, with hypertrophy and cardiac dilatation, inducing pulmonary congestion, appear to be inhibitory. Pregnancy retards active change in the lungs, lactation aggravates it. Pulmonary emphysema, asthma, and chronic bronchitis delay the course of tuberculosis. Localisation of deposit or cavity to one apex, especially the right in males (J. E. Pollock), with absence of disease in the other lung, is of favorable import when associated with other satisfactory symptoms. As indicated by Hippocrates,¹⁶ diarrhœa due to tuberculous enteritis occurring in any case of phthisis is of the worst omen, and no less so is the onset of laryngeal tuberculosis. Œdema and thrombosis of the veins of the legs commonly portend early death in any case. Aphthous stomatitis is also a sign of approaching death. This is a not uncommon occurrence at the end of many chronic and exhausting diseases, and justifies our informing the patient's relations that the powers

of life are rapidly waning.¹⁷ I have, however, sometimes known this condition to be removed and life to be sustained for some weeks subsequently. A red spongy condition of the free edge of the gums is to be regarded as a bad sign in pulmonary phthisis. Pneumothorax occurring in cases of early tuberculosis of the lung may exercise an inhibiting effect on the primary disease. At a later stage death is not long postponed after this accident. In tuberculous pyo-pneumothorax the practice of paracentesis may encourage rapid extension of tuberculosis.

CONSTITUTIONAL DISEASES.

Passing on next to consider some points respecting prognosis in various constitutional diseases I may refer first to diabetes. We have to deal with two main classes of patients thus suffering—the lean and the fat. The former present the worst cases, the disorder being more or less acute. As is now well recognized, the younger the patient the worse the prognosis. An originally good constitution counts for something even in these cases. Every additional decade of years helps towards a less grave, or immediately grave, outlook. Coma is less often met with as a fatal precursor after the age of thirty-five years, but it may prove to be the termination of cases at later ages after the onset of acute intercurrent disorders, such as pleurisy, pneumonia, or after pulmonary tuberculosis or gangrene of a limb. The fat diabetics, so-called, are often gouty and sufferers from a mild form of glycosuria. They are not seldom not diabetic in any true sense. They are, however, vulnerable, and their lives are, though often prolonged by care and judicious treatment, always precarious. Speaking generally, after forty years of age the outlook becomes less serious. Loss of knee-jerks in any case is to be regarded as a bad sign, and the presence of diacetic acid in the urine is grave and significant of danger sooner or later. Chronic cases of diabetes in the elderly may go on fairly well in persons of fine constitution for thirty years. I have never known recovery from coma in any instance. The only case I have read of occurred in a woman aged sixty-seven years, in whom after five hours of insensibility recovery followed the inhalation of oxygen gas, together with calomel purgation and the employment of ether, ammonia, and morphine. The patient made good progress on restricted diet and was fairly well six months afterwards.¹⁸ I have seen threatenings of coma in diabetes distinctly averted by purgation with castor oil. Purpura (purpura cachectica) supervening on any chronic disease is of evil augury and is among the latest of malign symptoms in cases of cancer, tuberculosis, Hodgkin's disease, Bright's disease, and heart disease. Petechiæ are most often found on the lower extremities, but may occur on the back or indiscriminately. In hæmophilia profuse bleedings are more likely to prove fatal in the first climacteric period. The risks diminish somewhat with advancing years, and recovery, with rapid hæmopoiesis, may follow

upon an attack so grave as to cause the patient to be almost ex-sanguine. The capacity for hæmopoiesis in these cases is quite remarkable. In pneumatic fever, if the seventh or eighth day be surpassed and no cardiac complication has supervened, we may not expect the occurrence of any form of carditis or of pericarditis; but, if a relapse occurs, we may meet with this as a manifestation of the fresh attack. The younger the patient, especially if of the female sex, the greater the risk of rheumatic carditis, whether endocardial or pericardial and the absence in early life of arthritis should lead to more solicitude as to the latter condition. Incoercible hyperpyrexia is generally fatal in rheumatic fever, as in other diseases.

DISEASES OF THE DIGESTIVE SYSTEM.

Cancer of the stomach commonly proves fatal within a year from the time a certain diagnosis is made. Those cases last longest and have less suffering in which neither orifice is involved. In cirrhosis of the liver, if signs of toxæmia set in, life will not be prolonged many days. Tapping of ascitic fluid may aggravate the nervous symptoms of such toxæmia. If a free, collateral circulation is gradually established between the portal and systemic veins life may be prolonged for some years. Copious hæmatemesis or melæna is of very serious import and a recurrence of either is generally fatal. Cancer of the liver is usually fatal within twelve or fifteen months, but sometimes rapidly growing tumors may carry off the patient in a few weeks. Cancerous growths of the peritoneum commonly kill within a year.

Gall-stones.—The prognosis of cases in which gall-stones are believed or proved to exist in the gall-bladder is always uncertain. We know that many may be present for years and give rise to no, or few, symptoms; also that a few may be present and cause serious attacks of biliary colic. Continued irritation from them may induce cancer of the gall-duct, the gall-bladder, and the liver. Obstruction of the small intestine, commonly the ileum, is sometimes a grave complication due to plugging by a biliary calculus. Modern surgery leads us to frame a more hopeful prognosis in many of these cases. A calculus may be removed from the bowel and the gall-bladder may be emptied of calculi with complete relief of all untoward symptoms. I am unaware of any methods of treatment, either by diet or by drugs, which can cause removal of any calculi already formed, but their further formation can certainly be prevented by appropriate medical procedures.

Typhlitis.—Many cases recover under judicious medical treatment. Perityphlitic abscess, if opened carefully about the ninth or tenth day, and the peritoneal cavity escape contamination with its contents, may generally heal favorably. Earlier surgical interference is very apt to lead to a fatal issue by toxic peritonitis (J. Berry). A gangrenous state of the vermiform appendix, if diagnosed, demands an early operation.

DISEASES OF THE RESPIRATORY SYSTEM.

In few diseases is the question of prognosis so important as in lobar pneumonia. Hughes Bennett used to teach, and all practical physicians now agree with the doctrine, that "a sthenic single pneumonia in a previously healthy young man gets well." Single or double pneumonia is fatal in a drunkard or when associated with delirium tremens. Pneumonia supervening in patients with pulmonary emphysema is fatal.¹⁹ Herpes labialis is a sign of good augury in the great majority of patients and mostly accompanies cases in which a sharp crisis occurs on the sixth day. Grave and prolonged cases with deferred crisis and some pleural effusion not seldom present no herpes labialis.²⁰ Abundant rusty sputa, bright in color, in a lean, even if elderly, patient, are a good sign.²¹ Sweating and moderate diarrhœa at the time of crisis are also favorable indications. Sputa of the "greengage" color or of bister tint are not of good augury, and sputa of a uniform dirty orange color (like anchovy sauce) are of especially bad omen. In pneumonia of the apex delirium may be anticipated both in children and adults. In the subjects of Bright's disease the prognosis is very grave. Indications of dextro-cardiac distension and general cardiac failure are always serious. Modern research has shown that leucocytosis is commonly of favorable import in pneumonia, and both laboratory experiments and clinical inquiry attest the value of this indication. My colleague, Dr. Kanthack, has for some time past lent his aid in investigating this point, and, with Mr. Lloyd, a former research clerk of mine, has fully confirmed the observations of Von Limbeck, Billings, and others.²² They find that an active inflammatory leucocytosis during the fever indicates, as a rule, a good reaction, and is often, though not always, a good prognostic sign. The multinuclear or neutrophile or finely granular eosinophile cells are those which are increased in number. Absence of leucocytosis is commonly a bad sign in any case. Diminished leucocytosis with falling temperature is found by Kanthack and Lloyd to be a good sign. Continued high pyrexia with low number of leucocytes is a bad sign. They noted that persisting or increasing leucocytosis with fever is of favorable import. The presence or absence of leucocytosis per se is not sufficient for a satisfactory prognosis, but, taken with the accompanying temperature (and the curves of the two processes are often parallel), it may prove a valuable and favorable indication.

Experimental research on animals confirms these views, since Kanthack and Römer²³ found that on injecting pneumonic bacterial toxin, if recovery occurred, there was, first, a sudden fall in the number of leucocytes of short duration, followed, secondly, by a rapid rise of them, together with fever, and, thirdly, persisting leucocytosis with a gradual disappearance of the excess of leucocytes as the temperature fell. If a fatal dose was injected the leucocytes diminished and remained so, the

temperature becoming sub-normal. Kanthack's researches show further that if the specific organisms (pneumococci) are present in the blood and can be cultivated from it the prognosis in pneumonia in the human subject is bad. In diabetics pneumonia is fatal. In gouty persons the prognosis is grave, but many of them recover, and recurrence is not uncommon in after-life. In the aged and debilitated the outlook is always serious. If gangrene of the lung occurs the case is almost invariably fatal. Delirium, dry tongue, lividity of face, caphology, cold sweats, with falling pulse, chilliness of the nose and extremities, betoken a fatal issue. Pneumonia occurring in persons with valvular heart disease is commonly fatal. Pulmonary fibrosis, whenever met with, is an indication of chronicity. As a conservative process it induces protraction of any morbid condition. The tendency to fibrosis is significant generally of resisting power, and pertains only to persons of certain diathetic proclivity, more especially the arthritic. Clubbing of fingers, nose, and toes is a correlative hypertrophy associated with it in most instances.

Broncho-pneumonia.—Spare and lean persons are better subjects than obese ones for this disease and this applies to all ages. Sarcoma and most of the malignant of new growths in the lung usually destroy life within six or eight months, but they may kill more rapidly than this.

DISEASES OF THE CIRCULATORY SYSTEM.

Diseases of the heart.—The outlook is generally better than it was half a century ago. Pericarditis of rheumatic nature is very rarely fatal per se. I never meet now with the extensive effusions which were common thirty years ago and which led to fatal syncope. In Bright's disease pericarditis is commonly fatal, and septic pericarditis is uniformly so. With the practice of aseptic surgery purulent pericarditis is no longer to be regarded as necessarily fatal. Tuberculous pericarditis may be rather protracted, but is beyond recovery. Pneumo-pericardium is commonly fatal within two days. The principles on which a prognosis is framed in respect of valvular disease are now well understood. All depends on the constitutional powers, habits, and environment as regards the integrity and nutrition of the cardiac muscular fibers. Remarkable cases of longevity are on record, even where the worst and most dangerous form of such disease is present—aortic reflux; and intelligent treatment, instigated by accurate physiological research, has much to do with securing long immunity from fatal issue in all the varied evolutions of these diseases. I have already referred to the danger of continued and other fevers and of lobar pneumonia in such cases. Pregnancy may be well borne in many instances of mitral disease, the worst of these, however, being examples of stenosis, a condition commoner by far in women than in men. In cardiac dilatation with myocardial degeneration, tumid liver, and dropsy, a commonly fatal sign is Cheyne-Stokes respiration. This is

also met with in arteriosclerosis, uræmia, and cerebral apoplexy with greater frequency perhaps than in the last stage of cardiac disease. It is certainly one of the worst signs in any case, yet I have on many occasions known it to pass away and some measure of recovery to ensue. This is more particularly true of uræmic states.²⁴ Rupture of the heart is generally fatal, whether on the right side from injury, or on the left as a result of muscular degeneration. Life may, however, be maintained for some hours or even days. Tachycardia demands a very cautious prognosis. Sudden death may occur in a paroxysm. The outlook in Graves's disease is uncertain; one case in three may recover; death may be sudden. Bradycardia is less grave as a symptom, unless it depends on uræmia or certain toxins, or occurs in association with cerebral hæmorrhage, tumor, bulbar disease, or disease of the cervical spinal medulla. Prognosis in angina pectoris relates to the several structures of the heart and of the arterial system generally. When aortic reflux is present the prognosis is most grave, and, if advanced arteriosclerosis exists, the same must be said. True angina is rare before the sixth climacteric. Pseudo-angina never kills.

Congenital malformed heart.—In the viable class of cases life is rarely prolonged over puberty, the lesions being chiefly dextro-cardiac. These patients are liable to tuberculosis and are bad subjects for specific infectious diseases. A better prognosis for longevity attaches to lesions of the aortic orifice, which are, however, rarely encountered. Life may be prolonged to the third decade in these cases. Ulcerative endocarditis (arterial pyæmia) is almost always fatal, only sub-acute forms affording instances of recovery. The disease may last but a few days, or may persist for more than a year, before proving fatal. The prognosis is particularly grave if infective organisms are detectable in the blood of the patient and can be cultivated from it.²⁵

Aortic aneurysm.—No certain prognostics can be laid down in cases of this disease. Life is sometimes prolonged for ten years or longer. Sacculated aneurysms of the ascending part of the thoracic arch, pressing forwards, are commonly very chronic, and cause the least interference with vital structures, but they may, like other aneurysms, vary in the direction they take from time to time. In aneurysm of the abdominal aorta the prognosis is always grave. Arcus senilis is perhaps more generally recognized as a diagnostic than as a prognostic sign of a degenerated vascular system. By itself it is no sign of grave import. It may begin in the third decade of life, and death not occur for fifty or more years subsequently. Extreme arterial decay may be present, and in progress, without this indication.

Arterial sclerosis and atheroma.—Few pathological changes are apparently more conspicuous than arterial sclerosis and atheroma. With

fairly soft radial and temporal arteries there may coexist extreme atheroma of the aorta, or of the cerebral arteries, little or altogether unsuspected, and, per contra, hardened peripheral vessels may be no indication of similar conditions in the arteries of more essential and vital parts, such as the heart and brain. We may explain these seeming anomalies by reference to varying local conditions of blood-pressure, as shown by Oliver. These facts compel us to frame a not confident prognosis in many cases of suspected widely-diffused arterial decay. We have also to bear in mind the distinction between brittle and tough degenerate vessels.

DISEASES OF THE BLOOD AND DUCTLESS GLANDS.

Simple anæmia in young women is apt to recur, but most cases will recover if vigorously treated at intervals for three years. Pernicious anæmia admits now of less grave prognosis than formerly, owing to treatment with arsenic and marrow. Relapses are common. Osler knows of no cases in males that remained well for five years. Examination of the blood may help us in prognosis. Kanthack considers that in all forms of anæmia a steady diminution of leucocytes is a bad sign, and no less grave is an increase of the nucleated red corpuscles with a progressive diminution of hæmoglobin.²⁶ Leukæmia generally proves fatal within two, or at most three, years. The pure lymphatic form is the gravest. Hæmorrhagic tendency is of evil augury, and life is not of long duration after severe bleedings, internal or external. A gradual disappearance of the eosinophilous leucocytes is a bad sign in spleno-medullary leukæmia (Kanthack).

Hodgkin's disease.—Most patients die within two years. Recovery is rare, but certainly occurs. The disease may last, with periods of quiescence for four or five years.

Addison's disease.—A fatal result is usual within two or three years, but life may be prolonged for six or eight years, including periods of temporary improvement, exacerbation of urgent symptoms alternating with remissions of restored vital power.

DISEASES OF THE KIDNEYS.

Anuria of the obstructive variety, unless relieved by surgical measures, generally proves fatal within two weeks. Sometimes life is prolonged with singularly few symptoms for three weeks. In a case under Sir James Paget's care death did not occur till the twenty-second day.²⁷

Albuminuria.—The prognosis in respect of this symptom is only to be framed by full consideration of all the features of each case. We have but little knowledge respecting the issue of cases of so-called cyclical albuminuria of young adults, chiefly male subjects, but may believe that many of such patients entirely recover. After the seventh climacteric slight albuminuria, with finely granular casts, may occur for many years without giving rise to important symptoms. Chyluria of the non-para-

sitic variety may last for many years without disturbance of health. Chronic nephritis, tubal, interstitial, or tubulo-interstitial, often runs a protracted course. Prognosis can be framed only by a consideration of all the personal and diathetic factors in each case. I have long been convinced that there is great variation in the course and outcome of chronic parenchymatous nephritis; and while some patients rapidly pass into conditions beyond recovery, others hold on for many years, passing large quantities of albumin and degenerating tube-casts, with little or no dropsy, no cardio-vascular changes, enjoying, moreover, very fair general health, so long as care in all respects is taken. In one case known to me a patient was given a year to live. This was over twenty years ago, but this gentleman is now in particularly good health, although constantly passing albumin and casts. I am sure that many such patients do fairly well, and that by steady perseverance and treatment remarkable improvements occur—improvements sometimes owing to no particular drug or dietary. Many of us have known of such cases and have seen uræmic conditions arise again and again, with retinal hæmorrhages, retinitis, cardio-vascular changes, severe dropsy, and yet a marked improvement has set in and surprised us. Thus we think less gravely of uræmia than our preceptions were wont to do, and by modern treatment with drugs, and, occasionally, by the older treatment of venesection, we find this grave condition more amenable than was formerly the case. I have known attacks of uræmic convulsions with Cheyne-Stokes respiration to pass away, together with other symptoms, after many months of apparent stasis and incoercible indifference to orthodox treatment. The personal factor and tissue proclivities must, therefore, be reckoned within each case, and we have thus to regard the patient more steadfastly than his malady. Uræmia in cases of interstitial nephritis is altogether a more grave condition, and in a chronic form, without convulsions, but with more or less coma and stertorous respiration, generally precedes a fatal event. Epistaxis, hæmoptysis, or hæmaturia, or, indeed, any hæmorrhagic flux, is to be reckoned salutary in many cases of contracting granular kidney, as probably averting an intraocular or a fatal cerebral hæmorrhage.

DISEASES OF THE NERVOUS SYSTEM.

Neuritis.—Taking the whole group of conditions due to neuritis, a somewhat large and varied one, we may affirm that our prognosis is guided by consideration of the etiology and personal factors in each case. Early recognition of the nature of the disorder and of the peccant matter which has induced it is no less important than early treatment. The cases often last for months and years, but the results are quite remarkable if treatment be persisted in. I therefore regard the prognosis as generally favorable in cases of local neuritis, of which simple facial palsy is an example, and in cases of polyneuritis, febrile or toxic. Of the latter, satur-

nine neuritis is graver by far than arsenical. Endemic neuritis, or beriberi, if early treated, is not so serious a malady as is commonly supposed. Primary optic neuritis is always a serious symptom. Tobacco amblyopia is as a rule recovered from. Peripheral facial palsy, without electrical changes, usually is recovered from within three weeks. With transposed electrical reactions we may not look for recovery much under three months. With electrical reactions of degeneration the outlook is tedious, and from twelve to eighteen months may pass before recovery is complete. Traumatic facial palsy may be permanent.

Meniere's disease.—The prognosis is always uncertain. Recovery occur, but deafness is the most frequent result. The symptoms may persist through life. In torticollis complete recovery is rare. In essential paralysis of children the outlook is certainly less grave than formerly, if assiduous electrical treatment be long carried out from the outset. In locomotor ataxia no absolute cure is to be expected, and the outlook is bad, though life may be prolonged for many years. Cases setting in violently are often devoid of the characteristic later symptoms and an arrest of the disease may ensue. This is especially noted after the occurrence of early optic atrophy. In aphasia the prognosis is only hopeful in the young, who may be educated again in the right cerebral hemisphere.

Cerebral apoplexy.—Prognosis in this condition chiefly relates to the particular locality involved and the size of the blood-clot. Pontine hæmorrhage is uniformly fatal, generally within a few hours, and so is that into the ventricles. The gravest indications are deepening coma, rising temperature two days after the hæmorrhage, and Cheyne-Stokes respiration. If the temperature falls after the third day and consciousness returns, a favorable issue may result. Albuminuria and glycosuria are of evil omen. A persistent firm pulse and the occurrence of acute bed sore are also fatal symptoms. Sometimes the tenth or eleventh day may be reached after a cerebral hæmorrhage, but, if the patient is restless and irritable, a fatal result will follow, although the clot may not be large.

Chorea.—Cases of this disease admit of a generally favorable prognosis at any age below puberty. At that period and after the outlook is much more grave. Chorea insanies is a very dangerous form. The average duration of the disease is ten weeks and three days.

Epilepsy.—The truth of Hippocrates' aphorism respecting this malady is still attested: "Epilepsy supervening before puberty may undergo change, those cases arising after the age of twenty-five for the most part terminate in death."²⁸ He also considered the prognosis to be bad in congenital epilepsy and when it occurred in an adult without any previous cause. Death in a fit is rare, unless a large cerebral hæmorrhage occurs in the attack or hæmophilia coexists. The prognosis is better in the male sex. Most cases arising in the third or fourth decade of life, for

the first time, with recurrence, are due to cerebral syphilis, and therefore admit of more favorable prognosis. Frequency of attacks and mental disturbance are always of grave import. Attacks of petit mal are to be regarded as serious, since they commonly eventuate in convulsive ones. Status epilepticus not infrequently leads to death from exhaustion. We may fairly affirm that this serious malady in most of its variations is now amenable to treatment, diathetic and medicinal, in a degree that would have been cheering to Hippocrates and Galen, not to mention physicians of more recent date, who practised, it may be, up to twenty-five years ago. Respecting insanity in its several aspects, we may declare that the outlook is always serious when improvement fails to occur within twelve months from the first onset of symptoms.

PULSE AND TONGUE.

Physicians have long been wont to gauge the degree of vital and residual power in the sick by reference to the pulse, and in few departments of clinical work has more effectual knowledge been obtained than in this study, accurate physiological research having made plain and placed on a scientific basis the several conditions so long known to observant physicians, thus aiding materially no less in treatment than in prognosis. I do not, however, propose to discuss this subject further on the present occasion. The conditions of the tongue have only more recently attracted scientific attention in this direction, and for a careful study of these we are indebted as physicians to Dr. Dickinson, who in his *Lumleian Lectures of 1888* contributed most ably to this subject.²⁹ To use his words, we may affirm that "the tongue, indeed, has a whole book of prognostics written upon its surface." The older physicians paid great attention to the condition of the tongue in diseases, and probably noted all that was observable to the eye. Modern study, however, places a different interpretation upon the nature and significance of many of the phenomena. Hippocrates was not behind in such observation as might be expected. We are here and now chiefly concerned with such conditions as enable us to form a favorable or unfavorable prognosis, and of these we have to take note more particularly of the dry tongue. This has always been regarded as grave. Dickinson found that patients, examined without selection, who had dry tongues, of whatever origin, exhibited a mortality of 50 per cent.³⁰ This indication mainly relates to prostration. "The kinds of diseases which it accompanies are chronic more than acute; if febrile, usually continued." Pyrexia and deficient secretion from the salivary and the buccal glands are the chief factors. "The tongue is found dry, glazed, and smooth in the later stages of tuberculosis and in exhaustion from continued suppuration; dry and rough at the end of cases of cerebral disease, hepatic cirrhosis, cancer, pyæmia, and severe pneumonia. Amongst the conditions of the tongue which favor a satisfactory

prognosis in any case are to be noted recovery of moisture and a cleaning of fur from the tip and edges towards the dorsum."

CRISIS.

It might be expected that in treating of Prognostics I should allude to the doctrine of crises and critical days. We have heard little respecting these in our time—little, certainly, that is dogmatic. But I venture to think that the best modern clinical research has done nothing to discredit the greater part of the doctrines of Hippocrates, Galen, and their followers in this respect. The accurate study of acute inflammation, of pneumonia, of the varieties of acute pleurisy, of the continued fevers, the exanthemata, and acute catarrhal processes has much confirmed the old doctrines and illustrated the true nature of crises and the causes on which they depend. Were we to take the pains I believe we might go further and find the grounds for the old belief in "indicatory" and "judicatory" days and for dependence on the "septenaries."³¹ As Dr. Munk has pointed out, it may be that we now, by medicinal interference, prevent the occurrence of various symptoms in acute diseases which in former days were allowed to manifest themselves as crises and præcrises. Let us hope, if this be so, that we are at least doing no harm to our patients. This is not perhaps a barren fear. To take the case of pyrexia, may it not be that we do ill by seeking to suppress what is probably a very salutary process and way out of the disease by administering in a routine fashion, and often, inordinately, antipyretic drugs? Some remarks of Dr. Munk, in the oration I have alluded to, so well apply at the present day that I venture to quote them here, expressing at the same time my entire agreement with them, and my regret that they should still be applicable in the expiring years of this century. "In the unhealthy state of the public mind on all subjects relating to medicine which characterise the present times (1858), where scepticism of all that is scientific, unostentatious, and orthodox in physic is associated with an astounding credulity towards anything absurd, unintelligible, presumptuous, and heterodox, there is nothing so well calculated to take and hold possession of the public mind, nothing which would more certainly conciliate the good opinion and confidence of the public towards legitimate medicine and its professors than that minute, systematic, and accurate prognosis which was practised by our forefathers in physic."

CONCLUSION.

I have endeavored, though, I fear, somewhat tediously and very incompletely, to bring into concrete form some of our present knowledge of prognostics in relation to various diseases. I have preferred thus to try to make this address as practical as I could, and I venture to hope that in departing somewhat from the lines usually followed by my predecessors, I may not have failed to enlist the interest of my audience. We,

as bedside physicians, exist to small purpose in the body politic, and our art, as exercised upon the ailments and sufferings of humanity, is of no avail if it be not in the highest and best sense practical. We cannot afford in this large Association to be merely professionally political, or even academic, if we are to fulfil our greatest purposes. We meet to aid one another in the performance of our daily duties, and to have our conceptions of our art brightened and made wider. We are now in peril, as I have said, from too narrow and limited conceptions of diseases, by reason of the inevitable differentiation and the specialism which is so rife amongst us; and these modern phrases require to be chastened by a review of all medicine from a higher and more comprehensive standpoint. The most experienced practitioners will agree with me when I say that it is not always an easy matter to certify how long a patient has to live, even in the presence of well-recognized symptoms of impending death. The end comes sometimes more rapidly and suddenly than was anticipated. Again, life is sometimes protracted in a remarkable manner, and our forecasts are proved to be fallacious. There is, however, no mistaking the speedy fatal issue in any case where the condition known as "the agony" once sets in, with the facies Hippocratica and tracheal râles, the sensorium being dull, the nose and extremities becoming cold, and cold sweats bathe the body.

In pulmonary phthisis and cancer of the stomach we meet with the most protracted fatal issues. In poisoning by strychnine and in rapidly spreading peritonitis, as after rupture of gastric ulcer, the unwary may be misled as to the certain fatal issue (unless modern surgery is promptly invoked) by the perfect mental clearness of the patients up to the last moments. Relatives and friends of the sick often ask our opinion and demand a prognosis, and they look to us to give them dependable information in the most decided and dogmatic form. No part of our duty demands more skill and tact than to afford a proper reply to these questions. While we must always be hopeful and encouraging as is permissible, we must not shirk the unpleasant truth which has so often to be declared. An old and wise physician, Dr. George Fordyce, was wont to guard and express himself under these circumstances by the use of a cautious "if." If this or that should not occur, he said, we may hope for improvement, but if such and such a symptom supervened we might not look on hopefully any longer.³² I commend to you the use of this cautious "if." But while it is very damaging to our character to be an alarmist, or to prognosticate evil things which never happen, it is more serious by far to be an optimist and to prove that we have not adequately gauged the true measure of gravity in any case we have to do with. The physician who brings most healing power to the bedside with him is generally one who is bright and encouraging and inspired always with good hope. The

most accurate prognosis comes from him who has with care and a large chastened experience first established a correct diagnosis, and has also learnt to employ remedial measures with judgment and good sense. An eminent French physician once said, "No one can frame a prognosis for a diabetic patient until he has been fifteen years in practice." If this be true, as I venture to think it is, we may apply the somewhat trite assertion to many other morbid states than that of which glycosuria is a symptom; and the significance of the whole matter is this, that we must look to the seniors of our profession to aid us in the matter of prescience of skilled prognosis. The younger men may often afford light in the matter of modern diagnostic methods to their seniors, but the experience and knowledge of the latter is needed, not seldom, in forecasting the issue of a case. Of these, the most shrewd may be, perhaps, the least confident, remembering that no *præsentia mortis* are invariably to be relied upon.

Gentlemen, I have done. Let me venture to hope that I have not unduly taxed your patience or your good nature in laying before you what to many may appear rather trivial and, possibly, sufficiently well-known matters. I will close this address in words of Hippocrates which commend to us all the study of prognosis. "It appears to me a most excellent thing for the physician to cultivate prognosis, for by foreseeing and foretelling in the presence of the sick the present, the past, and the future, and explaining the omissions which patients may have been guilty of, he will be the more readily believed to be acquainted with the circumstances of the sick, so that men will have confidence to entrust themselves to such a physician, and he will manage the case best who has foreseen what is to happen from the present state of affairs."³

¹ = Prescience (*Ἡρόνοια*).

² *Προρρητικόν, ἄ. Κωσκάι προγνώσεις Προρρητικόν β.*

³ I may however refer to the Cours de Médecine, Clinique, troisième partie, Du Prognostic, par Leon, Roston, Paris, 1839. Observations on Prognosis, P. H. Pye-Smith, Guy's Hospital Reports, 1887.

⁴ De Præsentia Vitæ et Mortis Ægrotantium, Patavii, 1601. The Presages of Life and Death in Diseases. Libri Septem. Translated by R. James, M.D., London, 1746, 2 vols.

⁵ Vol. i., p. 21, 1866, Introduction, J. Russell Reynolds.

⁶ Vol. i., p. 39, Introduction Professor Clifford Allbutt. ⁷ Aphor., vii., 79-80.

⁸ *Προρρητικόν, ἄ.*

⁹ Murchison records similar experiences and Dr. Cayley informs me that he has also witnessed the same favorable results. Treatise on the Continued Fevers, p. 226. First edition, 1862.

¹⁰ St. Bartholomew's Hospital Reports, p. 1, vol. xxv., 1890.

¹¹ Morse: Leucocytosis of Diphtheria. Boston City, Massachusetts Medical and Surgical Reports, 1895. "Leucocytosis is of no value in prognosis." Gabritschewsky: Annales de l'Institut Pasteur, 1894, vol. iii., p. 673. "A progressive hyper-leucocytosis in diphtheria justifies a bad prognosis." Ewart: New York Medical Journal, 1895, August 10th and 17th. "In unfavorable cases leucocytosis continues till death. In prolonged septic cases there may be an uninterrupted decrease of leucocytes till death. High leucocytosis = pronounced reaction, but not necessarily an unfavorable prognosis. Steadily decreasing leucocytosis usually accompanies a favorable course. Slight leucocytosis usually indicates a mild infection, but fatal cases may for several days show no increase, or even a decrease of leucocytes."

¹² Aph. 43, Section v.; Aph. 2, Section v.; Aph. 6, Section v.

¹³ Vide article on the "Prognosis of Tetanus," by G. V. Worthington. St. Bartholomew's Hospital Reports, vol. xxxi., p. 137, 1896.

¹⁴ Vide case of recovery reported by Dr. Samuel West, Transactions of the Clinical Society, vol. xxviii, p. 230, 1895.

¹⁵ Dr. Pye-Smith is disinclined to believe this. That the two diseases do not coincide is, he thinks, explained by their incidence in different periods of life.—Lumleian Lectures, 1893, p. 133. ¹⁶ Aph., 14, Section v.

¹⁷ I believe that Sir W. Jenner used to teach that when aphthæ appeared in cases of phthisis, it was well to summon any of the patient's relations from a distance who might desire to be present at their decease.

¹⁸ Transactions of the Intercolonial Medical Congress of Australasia: L. W. Bickle, Mount Barker, South Australia, p. 97, 1893.

¹⁹ According to Dr. Norman Moore, recovery is possible in persons with a healthy (unaffected) lung weighing from 22 to 24 ounces. But if the unaffected lung is wasted by emphysema, and only weighs 15 ounces, there is respiratory incapacity, and no possibility of maintaining life till resolution occurs in the affected lung.

²⁰ Pneumonia of septic origin, as from drain poison, is commonly fatal, and herpes is rarely met with in such cases.

²¹ "The less the weight with a given height and the more red blood in the sputa the better the chance for the patient." (Sir W. Jenner).

²² Billings, on Pneumonia, John Hopkins Bull, v. 43. 1. If favorable = marked leucocytosis during fever. 2. Prognosis in cases showing a complete and continuous absence of leucocytosis is, as a rule, unfavorable. 3. The presence or absence of leucocytosis only shows the virulence of bacterial poison; it is not a criterion of absolute prognosis. Ewing, New York Medical Journal, December, 1893. It may be said that a considerable leucocytosis is no indication that the case will pursue a favorable course. In several instances when recovery followed high leucocytosis was found at the time when the condition was thought to be hopeless. In severe forms of pneumonia slight leucocytosis is a very unfavorable sign. (Ewing only made a single examination, and does not consider the temperature chart.) Von Limbeck, Croupous, Pneumonia, Klinische Pathologie des Blutes. In the majority of cases there is a more or less considerable inflammatory leucocytosis—that is, increase of the multinuclear, or neutrophile, or finely granular eosinophile cells. Often the leucocytic and the temperature curves run a parallel course. A good leucocytosis during the fever, as a rule, means a good reaction, and is often, though not always, a good prognostic sign. Absence of leucocytosis is often, if not always, a bad prognostic sign. (This agrees with the animal experiments of Tschistovitch.) (a) Highly virulent cultures of pneumococci in rabbits = no leucocytosis or diminution of leucocytes, and rabbit dies. (b) Weaker cultures = marked leucocytosis and animal survives. (c) If animal comparatively resistant (dog) comparatively slight leucocytosis.

²³ Observations on Animals, Kanthack, Römer, &c. On injecting bacterial toxins if recovery: (a) A sudden drop of leucocytes of short duration; (b) this is followed by a rapid rise, together with rise of temperature; (c) leucocytosis persists while temperature falls, and then gradually disappears. If fatal dose injected: (a) Leucocytes diminished; (b) remain so, temperature also generally sub-normal. (I am indebted to Dr. Kanthack for these notes.)

²⁴ My colleague, Dr. Ormerod, has known recovery to occur in a case of spinal sclerosis in which Cheyne-Stokes respiration was present for some time.

²⁵ Dr. Kanthack informs me that he examined over twenty cases of septicæmia or endocarditis, and whenever organisms were found in the blood of the patients they died.

²⁶ In recording examinations of the blood it appears to be necessary to direct the attention of observers to the absolute importance of recognizing the specific varieties of leucocytes as described by Ehrlich.

²⁷ Transactions of the Clinical Society, vol. 11., p. 170, 1869.

²⁸ Aph. 7, Section vii.

²⁹ The Tongue as an Indication in Disease, Longmans, 1888.

³⁰ Dickinson, op. cit.

³¹ The seventh, fourteenth, and twentieth days were considered the most important of these.

³² Dr. Fordyce was physician to St. Thomas's Hospital, 1770.

³³ προρητικόν ἄ.

PROCEEDINGS OF SOCIETIES.

CINCINNATI OBSTETRICAL SOCIETY, MARCH 19, 1896.

Gall Stones.

DR. JOSEPH EICHBERG: A large part of the interest connected with the subject of gall-stones, from a medical standpoint, has to do with the etiology. The work of Charcot has cleared up much that was uncertain in this direction. It was found that gall-stones occurred more frequently in women, and chiefly during the sexual life of women, from the twentieth to the fifty-fifth year. The predisposition to the formation of gall-stones was traced largely to the function of gestation and lactation, in which there is a physiological tendency to the accumulation of fat at a time when the woman is likely to take little physical exercise. It was probably for the same reason they were found to occur in persons who in early life suffered from acute articular rheumatism, the accompanying valvular lesion enforcing a quiet life. This would keep them from the more vigorous movements later on. The formation of gall-stones was found also to be more frequent in the victims of lithemia. Obesity seemed to be a predisposing cause. Here, again, there was a lack of exercise and an over-indulgence, particularly in the amylaceous products. The bile retains its solution largely by reason of its strong alkalinity. In making post-mortem examinations when gall-stones have accidentally been found, it has been ascertained that the alkalinity of the bile was almost invariably reduced, and frequently it was neutral, or even feebly acid in its reaction. The principal ingredient of gall-stones we know is cholesterin, which probably forms 90 per cent. of the total ingredients of biliary calculi. It was supposed for a time that gall-stones were formed in consequence of an excess of cholesterin in the bile, but now it has been shown from the contents of gall-bladders taken from post-mortem tables, as well as the analyses of a bile from fistulæ, that the proportion of choles-

terin remains the same in cholelithiasis as in normal bile. Now some experimenters would find the cause in the secretion of a thick and viscid mucus, which forms the nucleus of the gall-stone. Support to this theory is lent by the fact that if a gall-stone is divided by a fine saw it is found to be formed of three layers, the inner layer being composed of a thickened, crystalline substance, or else an opening, as if the stone had been formed around a hole. I think there is little doubt at the present time, in the minds of those who have investigated this subject, that the excess of mucus in the bile would act like a foreign body in any saturated saline solution, or as the thread in the syrup, in making rock candy, giving a nucleus about which the crystallization of dissolved substances can take place.

The diagnostic points in connection with biliary calculi have been brought out to some extent in the papers we have heard this evening. Special stress has been laid on the absence of jaundice, and rightly so, as well as on the exceptional location of the pain. I would call attention to a sign of some importance in cases which have come under my own notice: It was always possible within twelve hours after the occurrence of an attack to find some trace of bile coloring-matter in the urine. It is supposed the colic is caused, not by the stone in the gall-bladder, but by the stone being in the duct. Its location in this particular spot gives rise to temporary obstruction. This, coupled with muscular contraction of the gall-bladder, forces some bile into the lymphatics, and thereby causes the appearance in the urine, within twelve hours, of a sufficient quantity of bile coloring-matter to be recognized by a careful examination. I would agree with most of the gentlemen who have presented papers this evening, that the diagnosis of gall-stones is not made sufficiently often. Pains which are often ascribed to other causes are frequently traceable to gall-stone. The hepatic, intermittent fever, it has been claimed, never appears unless there is an inflammation at the same time of the bile-ducts extending up into the substance of the liver, as well as affecting the larger ducts themselves. Cases have occurred in which, on post-mortem examination, the liver has been found the seat of disturbance, where the diagnosis was missed during life owing to the marked fever. It often would lead to elevations of temperature— 103° , 104° or 105° . Taking into account the sex of the patient, the condition of obesity, sedentary habits, excesses, particularly in the direction of starchy or saccharine foods, and an inherited tendency to gout, or a previous rheumatism, the pain should not leave us long in doubt. It is important the diagnosis should be made early in these cases, because, in many instances, it is possible by purely medical treatment to overcome the difficulty.

The medical treatment of cholelithiasis resolves itself into the medical treatment of the attack and the medical treatment of the interval. I

wish to emphasize the importance of this feature, because the cases usually come under the care of the physician primarily, and because most of these cases do not present distinct tumors, unless there be a decided obstruction in the common duct. An obstruction of the cystic duct blocks the channel in both ways and converts the duct into a cyst. Therefore, the early recognition of the true nature of the cause is of the very greatest importance. The treatment of an attack resolves itself largely into a treatment of the pain, for which there is nothing better, of course, than morphia. The old-fashioned formula of turpentine and ether derives its therapeutic principle from the ether, which serves as a diffusible stimulant, and not as a solvent of the calculus. But in the intervals of the attacks much can be accomplished by general measures. By diminishing the concentration of the bile we lessen just by so much the tendency to deposit some of its solid ingredients. This can be accomplished easily by alkaline mineral waters, which not only increase secretion, but also maintain the alkalinity of the fluid, and thereby lessen the chances of precipitation. Each country is partial to its own alkaline spring, but perhaps there has been no water which has attained a greater reputation than the Carlsbad springs, in Bohemia. In the neighborhood of this city I think there is a water, the French Lick Springs, which can accomplish just as much as the Carlsbad water. A strict regulation of the diet is a matter of very great importance, a regulation both as to quantity and quality. As has been noted in the history of the cases reported this evening, the most prominent symptoms are gastric in character—nausea and distress after taking food, a vague pain in the stomach. By giving the stomach rest between meals, and not overloading the stomach with food it cannot master, we place the liver in a better position. The starchy foods should, if possible, be prohibited entirely. I have in mind a case of hepatic colic occurring in a young woman after her first pregnancy, who, according to direction, abstained entirely from starchy food for one year, during which time she took horseback riding, frequently hot baths and mineral water. She has not had an attack since. It is true the cholesterin found in the bile is not obtained entirely from the starch or fatty foods, being formed from organic compounds as well. But if we overload the stomach with starch and fat, we favor the development of a fatty infiltration of the liver, with consequent functional impairment of its cells and alteration of the biliary secretion. Proper exercise is to be associated with dietary restriction. The relief of the condition on which the formation of gall-stones depends can thus usually be accomplished.

As to the solution of the stones already formed, we cannot promise so much. A number of remedies have been proposed for this purpose. But we meet with the same difficulties here that we do in the urinary bladder. Because solvents will dispose of concretions in test-tubes it does not follow

that a test solution will accomplish the same purpose in the economy. The mixture of ether and turpentine was first given for this purpose, but this has long since been given up as being of comparatively little value. The salicylate of soda does more to produce cholagogue effect and assist in the dissolving of small stones; dose, 30 to 35 grains daily. The stones, probably under increased biliary pressure, are forced out. The use of olive oil, which has been largely recommended, particularly in the South, and the ingestion of which in large quantity has been supposed to result in the passage of biliary concretions, is not sanctioned by practice at the present time. The quantities taken are enormous, and usually prove nauseating. The masses passed are simply the more insoluble fatty principles of the oil which pass through the intestinal canal.

There is another point to which I would like to direct attention from a medical standpoint. I am inclined to believe gall-stones, after the fiftieth or fifty-fifth year, are probably more frequently associated with malignant disease than has hitherto been recognized, and I believe they are associated with malignant disease in more or less of a causal relation. An autopsy I saw at the City Hospital is strongly confirmatory of this fact. A patient died of carcinoma. The hepatic and common ducts were free and patulous, and the patient had had stools of normal color all his life. The gall-bladder was completely constricted and converted into a cyst about the size of a hen's egg, containing a perfectly clear fluid. The cystic duct was obstructed by a calculus, and around this calculus there had formed a malignant growth, which extended from the cystic duct to the substance of the liver, and gave rise to a secondary enlargement there about the size of an orange. Gall-stones early in life probably do not produce such a result, but in gall-stones after the fiftieth year I think operation is more necessary than in earlier years, because of the danger of a carcinoma developing from irritation of the calculus. It is wonderful how much biliary colic may exist and suddenly all of the symptoms entirely disappear. I believe this is usually due to an ulceration, whereby the stone finds its way into the small intestine and allows a free passage of the bile, so that all the symptoms, including the jaundice, are no longer present. I remember two cases of jaundice, present in one case three years, in another eighteen months, where after some fever and considerable pain, the jaundice permanently disappeared and the condition of the patients improved very materially.

There is one other condition I would like to call attention to, and that is the care of the intense, almost intolerable, itching of the skin. Many cases complain of nothing so much as of this intense cutaneous itching, which disturbs the rest by night and gives them no peace by day. An old treatment is the administration of calomel in one-half grain doses for six or eight days, the doses repeated every two hours, so the

patient takes six grains of calomel in the day. It rarely results in salivation, frequently causes the passage of greenish stools, and promotes more rapid evacuation of bile. This treatment has been lately revived, and very excellent results are claimed for it, especially by German observers.

Dr. Geo. O. Jones reported the following case:

Miss M., white, aged forty-two, seamstress, admitted to Christ's Hospital, November 6, 1895. Mother died of kidney disease.

In 1892 she began to be troubled with gastric irritation. About five months previous to her admission to the hospital she had what her medical attendant called "gastric ulcer and dyspepsia." She could not retain anything on her stomach for any length of time. Occasional attacks of jaundice—the last, though slight, of about three weeks' duration. Has lost considerable flesh. Finally it was diagnosed "cancer of the liver."

On examination, there was tenderness over the abdomen, right side extending around to the lumbar region; in fact, continual pain, at times intense. All and any movement or exertion—standing, walking, riding over a rough road—aggravated the severity of the pain.

In turning from side to side she complained of something falling, or when in an upright position, of a dragging-down sensation, accompanied with a feeling as if something was torn loose. Pain down both thighs, more in the right. Nausea. Great pain over the renal region, also the so-called depression of the renal space. In a word, every symptom pointing to a case of movable kidney.

She was quite hysterical, and became despondent at times. Her appetite was good; bowels acted normally; stools normal in character and without odor, but she was not in a condition for making an exploratory operation.

Taking tonics and plenty of rest, with the necessary good hygienic surroundings, in a few weeks she became much improved, and I determined to make the above operation. In the meantime I called in Drs. Conner, Dandridge, Oliver, Geo. Allen and Hall. All except Dr. Hall leaned toward the idea of movable kidney. Dr. Hall was non-committal.

December 6, I concluded to operate. Drs. Conner, Geo. Allen, Oliver, Haines and several others were present, Dr. Oliver assisting. The patient was placed in the usual position, lying over a hard pillow, so as to give me all the space between the last rib and the crest of the ilium. As soon as the patient was under the influence of chloroform I made the usual incision. After getting down to the renal fat I began to feel for the kidney, and found it just where nature intended it should be, in its proper place. Feeling somewhat annoyed I began to feel around to see what was the matter. My finger came in contact with a cyst pointing

to the opening. I began to suspect that I had gotten hold of a wandering gall-bladder. I requested Dr. Oliver to examine what I had. After careful examination he said it looked to him as if we had struck a stone quarry. I then, with the aid of two pressure-forceps, brought the cyst to the opening and packed the side with gauze. I made an incision and a large amount of bile made its escape. With the forceps I extracted seven large stones, but with a good deal of difficulty; the eighth was extracted, which was of good size and required some force to bring it. After washing out the bladder I stitched the wall of the cyst to the wound, placed a drainage-tube, made the usual dressing, and put the patient to bed. Her convalescence was somewhat protracted, but she eventually recovered.

CINCINNATI OBSTETRICAL SOCIETY, MARCH 19, 1896. GENERAL DISCUSSION.

DR. JOSEPH RANSOHOFF: The subject has been gone over so well from all points of view, there remains very little to be said, and what I have to say will probably be in contrast with what has been said.

Now, in regard to the gall-bladder being a rudimentary structure, and therefore more prone to disease. We have many rudimentary organs which give no trouble; for instance, the hydatid of Highmore of the testicle, of which we hear little after we get out of the dissecting-room. I doubt if we hear much of the pineal gland. The gall-bladder has a function. The mere fact that in the Cincinnati Hospital a contracted gall-bladder was found does not show that the woman did not suffer from gall-stones perhaps for many years. I am led to believe that the generally adopted view that women suffer infinitely more than men from gall-stones is not true. I have recently had five cases, and two of them were men. I have already operated five times upon men for gall-stones. It is true, usually the gall-stones are found in the gall-bladder, yet I recall one case very distinctly, presented by Dr. Withrow to the Academy of Medicine, in which the man had a stone in the common duct and another in the hepatic duct, and the largest was, I believe, in the hepatic duct.

In regard to the statement that gall-stones developing in old persons must lead one to suspect malignant disease, or that there is a distinct relationship between malignant disease and gall-stones in the aged, is undoubtedly true; and yet I have seen many cases in which, because of the age of the patient, it was supposed a malignant disease was present, and an operation refrained from. The first gall-stone operation I did was on an individual seventy-six years of age, who never had suffered at all until six or eight months before the operation, and yet had five large gall-stones without any malignant disease. Quite recently I assisted Dr.

Evans in a cholecystotomy in a man aged seventy-four, who had all the evidences of a grave icterus, in whom the tumor could not be distinctly felt, but a tenderness could be detected in the neighborhood of the gall-bladder, and in whom the diagnosis was made of a probable malignant disease. In that case four or five gall-stones were removed from the gall-bladder, and there was no vestige of malignant disease.

The technical part described by the gentlemen to-night tallies with the general methods. I believe the operators, however, have not made a mistake by not making an ideal cystotomy. Opening the gall-bladder, removing the stones, and then dropping the gall-bladder back into the cavity, should not be done. I have never had the courage to do it. I know in many cases there has been no flow of bile for twelve, twenty-four and thirty-six hours, and then the flow of bile comes on with a rush. If the stitches at that time were not firm and the gall-bladder in the cavity, the end might come very quickly. I do not make the operation in two sittings, as do some. When one has a large gall-bladder to deal with, the operation is certainly one of the simplest in surgery. There is nothing simpler than making a cholecystotomy if the gall-bladder can be brought into the wound. It is only when the gall-bladder is very small, when there have been adhesions and one must operate through an incision in a woman weighing possibly 240 pounds and only about four and one-half feet in height, that the operation assumes very great technical difficulties. I remember in one case we were certainly at the operation an hour before we could find the gall-bladder itself. In that case it was absolutely impossible to bring the gall-bladder into the wound at all. The Murphy button had not been devised, and I doubt if it would have answered. We packed the wound after operation and the patient recovered very promptly.

It has been asked whether there is ever any reason to remove the gall-bladder. I think there is. If we can do nothing with the gall-bladder and know the ducts are perfectly patent, we are justified in removing the gall-bladder. Sometimes the gall-bladder is so soft and friable it is dangerous to leave it in the patient, and in such cases it should be removed, if for no other reason, to demonstrate what our friend here has said, that the gall-bladder is a useless structure.

Speaking of difficulties of diagnosis, only in one of all my cases of gall-stone have I ever been able to make a positive diagnosis before the operation by the passage of stones, and that was a case operated upon not long ago at the Good Samaritan Hospital. The patient had passed fourteen or fifteen stones. At the time of the operation, although we could feel the stones, we could not remove them. They disappeared under touch. The patient was retained in the hospital for about two months, and he has had no attacks since. The feces have been washed and no stones found.

Very few surgeons have many cases without some mortality. When we speak of the fatality we must divide the cases into two kinds: (1) When the stones are in the gall-bladder or cystic duct, the cases ought to get well; (2) but when the stones are in the ductus communis choledochus, perhaps thirty or forty per cent. of the cases will die. The facility of the operation is not here nearly so great. Worse than all, we are dealing here with a region in which we have some blood-vessels of very significant size, the wounding of which, while it may not be immediately fatal, certainly produces a degree of hemorrhage that is very alarming. In one case I was fortunate in finding the gall-stones in the ductus communis choledochus, but it was impossible, because of the oozing, to remove them. I packed the wound and after twenty-four hours was ready to remove them, but I removed them then without the patient's knowledge—for he was dead. I have had two cases of stone in the ductus communis choledochus, one in a man and one in a woman, both of which recovered.

The question of anastomosis between the gall-bladder and intestine is one with which I have had no practical experience. I think it would be better to resort to the plan which originally led to the bringing of the bile into the intestine as a secondary operation. The operation of cholecystenterostomy was really an operation which was devised to overcome fistula of the gall-bladder that would not heal. Right here, I might say, I was interested in the remark made by Dr. Jones, in regard to his case, that he had allowed the fistula to remain open a considerable length of time. I know I have allowed some cases to remain open for the simple reason I could not get them to close. That is one of the banes of cholecystotomy. When we come to the turning of the bile into the intestinal canal, I believe it is safer to make the operation in two sittings. When it is impossible to know an obstruction will be relieved, I think it is wiser to establish an ordinary fistula, and if that will not close of itself—in other words, if the obstruction in the ducts is not overcome—it is better later to turn the bile into the intestinal canal. You know operations upon patients who are jaundiced are very often fatal. The operation, then, so far as its gravity is concerned, is very different from that in a patient who is not jaundiced. The less we do in the jaundiced individuals, except to give immediate relief, the better it is for those individuals. We had better give the patient an opportunity to recover from his jaundice before resorting to a grave operation.

Dr. DUNNING: I did not purpose saying anything upon this subject to-night, and besides, I believe there is little left to say, since the subject has been so thoroughly discussed. But, as to diagnosis, I believe it has not been clearly enough shown that there is a possibility of differentiating

an obstructed gall-bladder from a floating kidney. It seems to me we ought not very often mistake one for the other. If we remember, the distended gall-bladder always rises and falls with respiration, and that nothing can hinder this unless some force is applied to the gall-bladder, and that the movable kidney may be moved so far away from the under surface of the liver and the diaphragm that it will not be in any way influenced by respiration. This is a practical point of very great value in differentiating between these two morbid conditions. I have been enabled several times to demonstrate a floating kidney when a distended gall-bladder has been thought to be the trouble. The best position for the patient, in examining for distended gall-bladder, is upon the back, the thighs flexed upon the trunk, the abdominal walls relaxed. Then we can take hold of the fundus of the gall-bladder, and if the patient takes a long inspiration, the descent of the gall-bladder and liver can be accurately determined. It will recede again during expiration. If the patient is put on the side, if there is a floating kidney, we can push the kidney far beyond the edge of the ribs and imprison the kidney by pushing the other hand between the kidney and liver, depressing the wall so there is no movement of the kidney during respiration.

Now, in the matter of diagnosing gall-bladder trouble and differentiating between that and malignant disease, I have considerable feeling, having several times made incisions for supposed distended gall-bladder and found malignant disease. In one instance, I found a malignant disease extending up into the liver, and, in another instance, I found a nodule which so nearly resembled the gall-bladder that I thought that organ was involved. I think I made a mistake in both these instances in operating when there was absence of the characteristic pain. I believe I would not operate again unless that pain were present. I think, no matter how distinct a tumor we may have, no matter if it is in the region of the gall-bladder, if we have the pain absent we should refrain from operating. In the two instances in which I operated and found cancer, there were extreme jaundice and hemorrhage. The hemorrhages had been present for some little time before the operation. I believe we may conclude from the study of cases that hemorrhage with jaundice is more frequently present when there is malignant disease than when there is simply jaundice from distended gall-bladder. I believe, as Dr. Ricketts has told us, every man must be his own judge when it comes to operating. I never did the ideal operation, yet once opened the common duct behind an impacted stone and took it out. In that instance the walls of the duct were so thick I thought the operation simpler than attempting to crush or remove the stone from above. The patient made a good recovery. In another case I was unsuccessful in removing a stone at one sitting, but succeeded subsequently. In that instance we have now in-

termittent closing of the common duct, and the fistula remains open. Possibly some stones were left behind and may be a re-accumulation.

I am very much pleased I am able to be present to-night, and thank you for the courtesy accorded me.

Dr. N. P. DANDRIDGE: I have had so very little experience in this branch of surgery I do not believe I can contribute anything.

Dr. REAMY: I have seen several cases that have gotten well without operation. I only mention that in contrast with the expression of my friend. I do not mean by that an operation is not justifiable or ought not to be done, but I simply want to call attention to the fact it is not always necessary to operate at once.

Dr. RUFUS B. HALL: I quite agree with the remarks of one of the speakers, that we should divide these cases into two classes, one, the cases in which the operation is performed upon the gall-bladder, and the other class, those operated upon the common duct. The doctor will remember this subject was discussed at the Academy a few months ago, and then I said I thought the mortality following the operation of removal of a stone impacted in the common duct, when the patient is markedly jaundiced, five to eight or ten weeks' duration, was more than 50 per cent. The doctor at that time thought 30 per cent. or 40 per cent. would cover the mortality. I will grant that will cover the reported cases, but when we take into consideration that many operators report their fatal cases last, or not at all, and in many neighborhoods there are unreported cases of fatal operations, especially the fatal cases of operations upon the common duct, I am fully convinced the mortality is 50 per cent., if not greater, following operation for removal of stones impacted in the common duct. From this we can draw a practical lesson, which was emphasized by the speaker, that we should do in cholemic patients as little surgery as possible. We must give the patient the best chance possible. Do not do a long operation when you can unload the patient by making a fistula, and then, if necessary, make a secondary operation to close the fistula, when he is practically a well man. The second lesson is that a large number of patients suffering from stone in the common duct have suffered for a long time, years and years, and finally jaundice comes on and after several attacks there comes the desperate one, and after the jaundice has continued for a number of weeks, and at almost the last, they consent to an operation. The lesson to be gained from this is a practical one. The patient known to be suffering from gall-stone colic, year after year, should be operated on before the stone is driven into the common duct. They should be operated on while the stone is still in the gall-bladder, before they do have jaundice. In other words, I believe we could make a working rule something after this: If a patient

were known to have gall-stones, and the suffering is of such a character as to demand relief after several attacks lasting over a number of months, then advise operation, and do not wait until the stone is forced into the common duct, converting the case from one in which 98 per cent. recover to one in which fully 50 per cent. die.

In reference to the case reported by Dr. Jones, I remember seeing the case in the wards of the hospital and examining it hurriedly. While visiting another patient at the hospital the doctor asked me to come in and see that case. I rather considered that a compliment, and did not regard my visit as a consultation, or know that I was expected to express an opinion. In answer to a question, I said in a laughing way: "Doctor, I believe I would cut the patient in front." I did not say what I thought it was; I did not make a diagnosis, but I said I would cut the patient in front because the diagnosis was so uncertain. I do not know what I would have done if I had had the case to consider and operate upon. Possibly, I would have made the incision in the back. But, as it is, I think the doctor does not owe us any apology, for if all our cases of gall-bladder operations do that well we should be satisfied.

Dr. JULIA CARPENTER: As to the medical treatment of nonsurgical cases, there are two points to which I would like to refer. The first is concerning the treatment during the attack, and the second concerning the treatment between the attacks. A brief statement of a case will illustrate these two points.

Nearly three years ago I was called to a case of very extreme colic from gall-stones. The patient said; "Can you not relieve me without a hypodermic? I have so many attacks and am so sick from the morphine for several days following, that I dread that sickness almost as much as the pain itself." I replied: "If you have the patience to endure the pain, we will try something else first." I then gave him ten grains of phenacetin, which brought some relief. In ten minutes the dose was repeated and the pain grew still less. Three antikamnia five-grain tablets were then given ten minutes apart. By that time the pain had almost ceased, the patient fell asleep, and that ended the attack. In a few days he was about again, and was most grateful for having escaped the several extra days of sickness from the morphine. I inquired whether he was sure the trouble really was gall-stones, and whether any had ever been found. He replied he had had several physicians, and each one had diagnosed gall-stones, but no one had ever told him to search for them. I then explained to his wife the process of searching for them, viz., to have the evacuations diluted with water and strained through cheese-cloth. The result was there were found three small, pure white stones, each one having the appearance of a two-grain oval quinine pill. They pulverized

easily, and had the exact appearance of white cholesterin crystals. In a few months he had another attack and the same treatment relieved him. In nine months more he again had an attack, but the same treatment did not relieve him sufficiently, and I followed it with a hypodermic of one-eighth grain of morphine with atropine, when the pain ceased entirely. No nausea followed the morphine, and the same speedy recovery ensued.

The point of interest is that morphine is not always necessary to relieve these cases, and when the other remedies are not sufficient, still, if used first, less morphine is required and the dreadful sick stomach that follows its use can be avoided.

As to the medical treatment between the attacks, there is a method that has not been mentioned, with which I have apparently had success. That is the systematic irrigation of the bowels with at least two quarts of water twice a week. In the case mentioned a year has now passed since the patient had an attack, and before using that method, for a number of years, an attack occurred every few months. This treatment, I believe, has had considerable to do with the good result.

Dr. EDWIN RICKETTS: The first patient I operated upon was a lady sixty-three years of age. In that case the stones were found in the common duct. Already I have had five cases in which undoubtedly there were calculi, in one case twenty-eight grains of stone in the common duct, in another case two stones in the common duct. In the case of twenty-eight stones they were in the common duct as well as in the gall-bladder. One thing as to the stones permanently engaged in the common duct, I do not think anybody ought to attempt to do anything in gall-bladder surgery without a pair of ligature forceps; for, by introducing them, and then opening them, they dilate the gall-bladder wall, which we must remember can be stretched, and by the use of these forceps we can in this way extract the stones easier than in any other way. In a case operated upon last May, I used the Murphy button. That is the extent of my experience with that instrument. The patient since that time weighs about twenty-five pounds more than she has weighed for years. The button was passed the thirteenth day. But the greater number of these cases are treated by the old-fashioned cholecystotomy.

Dr. CHAS. H. BONNIFIELD: I have very little further to say. As I said when I reported my case, I was unable to discover any cause for obstruction in the common duct, but as my patient was old and very weak, this exploration was not as thorough as might have been. The cystic duct certainly was not dilated. I could see the opening of the duct, and could feel it very distinctly with my finger, and I could trace both ducts through their whole course, and could discover no cause for obstruction.

So I hope, in time, the obstruction will pass away. I telephoned Dr. Mitchell to-day, and he said the patient was still discharging a large quantity of bile, but he said she had gained considerable in health.

In regard to Dr. Dunning's remarks as to the ease with which we can diagnosticate between floating kidney and gall-bladder, I agree with him we can. But there is such a thing as a misplaced kidney, not necessarily movable, and in such cases the differential diagnosis may be very difficult.

Dr. WENNING: The first point I would like to answer is the one raised by Dr. Eichberg as to the absence of the biliary matter in the urine. I cannot vouch for that case, but that was the history given me. I question very much whether that was the fact. I do not know whether chemical examination was made previous to the time that the diagnosis of cholelithiasis was made.

Now, as to the intermittent fever. At the time that the pains came on, the patient evidently had more fever at night than in the daytime.

As to the remarks made by the other gentleman, I would like to take exception to the complete ruling out of cholecystotomy by Dr. Ricketts. I think his remarks are too sweeping. If it is simply a useless organ, I cannot see what good can result from leaving a badly diseased gall-bladder in the body. In the great majority of cases cholecystotomy is indeed a safer operation than cholecystectomy, and if the normal functions can be restored, with potency of the duct, it is the only justifiable operation. But when the function of the gall-bladder is destroyed and there is constant liability to recurrence, cholecystectomy is undoubtedly the ideal operation. There is no reason why with proper precautions and in skilful hands the mortality from cholecystectomy should be any greater than from cholecystotomy.

Dr. SCHOOLFIELD: In regard to the differentiation of distended gall-bladder from movable kidney, I have a case in my mind in which three as able diagnosticians as ever were members of this society, made a mistake in diagnosing a case as distended gall-bladder, which turned out to be a floating kidney. With each respiration the tumor came down and could be felt. There was jaundice; there were periodic attacks such as we have in gall-stone colic, and also the respiratory projection of the tumor. I have had the lady under observation about three years, and during almost all that time I have treated her for gall-stone colic. She has had repeated attacks of jaundice from pressure, but within the last two or three months, I have been able to make a very distinct diagnosis of floating kidney. The kidney has enlarged and come down low enough to enable me to get between the kidney and the diaphragm. But

this case shows it is not always easy to make a differential diagnosis between distended gall-bladder and floating kidney.

In reference to cancer occurring in persons with gall-stones, particularly old persons, I do not think the age of degeneration produces the cancer simply coincident with gall-stones, but the gall-stone itself, by causing irritation, is the original factor in producing malignant disease. I think also, as Dr. Ransohoff has said, on those cases of obstruction of the gall duct in which there is extreme jaundice, if we make a cholecystenterostomy, it is best to do it secondarily. The danger of operating with extreme jaundice is certainly very great, and it is much better to make a fistula to relieve the jaundice and afterwards do a cholecystenterostomy if necessary.

Dr. EDWIN RICKETTS: I do not think the doctor understood me in regard to the cylinder of Murphy about which I spoke. It is a cylinder about four or six inches in length in which there is a button that can be fastened at the bottom of the cylinder, and then it can be packed around from bottom to top. The cases I think are better treated in that way than with cholecystectomy.

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ABSTRACTS.

SPRAINS OF JOINTS AND THEIR TREATMENT.*

Because of their common occurrence, we are apt to overlook the importance of sprains, though the amount of damage in these injuries is often greater than it is in fractures. Constitutional causes, such as gout or rheumatism, and in some people a feebleness of the power of repair, have, it is true, much to do with the final result; excluding these, however, there are few injuries which yield more readily to the proper treatment, if we only observe two things. These are, first, to begin treatment at once; second, to see that our treatment is carried out in a thorough and systematic manner.

Before considering the question of treatment of these accidents, it might be well to consider the underlying anatomical causes which are responsible for most of these accidents. The development of the muscular system determines the strength and security of a joint. One can almost assert as a positive fact that sprains never occur unless the muscles are either weakened or tired out by prolonged exertion, or caught by some sudden slip, unawares, before they can recover themselves. Speaking generally, it may be said that sprains are the result of a twist so rapid and sudden that recovery cannot take place in time. The func-

* John F. Culp, M.D., Steelton, Pa., in *Medical Record*.

tion of a joint is movement. Considering the way in which sprains interfere with this, the muscles which direct and execute these movements are as much concerned as the ligaments, which have only the passive mission of checking them when they become excessive. The question of diagnosis is, generally speaking, not difficult, though, in sprains of some of the complicated joints, it is often by no means easy.

Fractures near joints and, in children, the separation of the epiphyses of the bones, must all be excluded. Without an anæsthetic, in the severe sprains of the larger joints, it is often impossible to make a positive diagnosis. Muscular sprains are, as a rule, distinguished by a peculiar sensitiveness of the skin, most marked over the joints or at the point of attachment to the bones or tendons. Very often, after the joint has almost recovered from a sprain, and an imperfect diagnosis or no diagnosis has been made, we can clear up the matter, with some joints at least, by carefully observing the tender points. A tender spot just back of the greater trochanter nearly always affords valuable information as to a hip-joint sprain. In the knee this tender spot is toward the under side of the knee cap, slightly below the joint center. With the ankle joint, while the sprain is constant, its location is not so constant, though it is usually toward the inner side of the external malleolus. The tender spots, probably, generally mark the location of adherent bands, or, perhaps, roughened synovial fringes, or sometimes spots where there has been extravasation of blood into the joint capsule.

Our results will depend on the earliness with which we see these cases, and on the thoroughness with which we carry out certain fixed indications. These indications are just three :

1. To limit the extravasation of blood and lymph.
2. To promote the absorption of effusion.
3. To promote the healing of the torn structures, and to restore the usefulness of the joint.

We can best control the extravasation due to broken blood-vessels by local applications, by placing the joint in the proper position and by the use of judicious pressure and thus securing rest for the joint. Unless the cases are seen within one or two hours after the injury, or unless, later in the case, inflammation sets in as a complication, cold applications do not answer as well as do hot ones. Soaking the part in very hot water in delayed cases not only relieves the pain better, but it seems to produce a more permanent impression on the swelling. The various other local applications almost invariably owe whatever virtue they possess to the spirits they contain. We can, however, make an exception with the old time-honored lotion of lead water and laudanum. Much may be done to check the bleeding from torn vessels by placing the articulation in such a position that the joint cavity is di-

minated. If left to itself, in most sprains, we find the joint in a condition of considerable flexion. While this position gives the most comfort temporarily, it conduces to a continuance of the bleeding, because it enlarges the joint cavity to its full extent. We can rely on the judicious application of pressure, however, not only to limit the amount of effused material, but to relieve the pain as well. Pressure, as usually applied by bandaging, does more harm than good. The bony prominences, which do not need it, receive the support, while the hollows and irregularities about the articulation do not get any at all. It has been my practice to loosely envelope the joint with a couple of layers of absorbent lint, which has been saturated with a lead-water and laudanum solution. Over this a good, thick padding of cotton wool is applied, care being taken to make it thicker over the hollows and irregularities. Well-picked oakum is a good substitute for the cotton. A bandage carefully applied over such a dressing will make the ideal compression and support.

Sprains of most joints, when treated with proper local applications, position, bandaging and rest, do not require a splint. It is good routine practice, however, to exclude from this the knee and the elbow, the two most complicated joints. It is well, in these sprains, to apply a felt splint if the injury is at all severe. Rest in these cases is a necessity, and while it is the first indication in this class of injuries, yet, after the subsidence of the swelling, in most cases, we can begin movement within three or four days. Unless we have to deal with a rheumatic or gouty subject, this, as a rule, is not too early. Acute inflammation, so often dreaded as a complication, rarely comes on as a result of early movement. We must, however, know just what damage has been done before we begin to move a joint, or we may make matters worse. For example, in making passive motion in a sprain of the ankle, where the external lateral ligament is so often torn, it would be bad practice to adduct the foot. If, after cautious and well-regulated movements, the joint swells and becomes tender, it is well to wait at least a week or more before resuming movement.

The second indication, in treatment to promote the absorption, is to be met to a great extent by bandaging and rest. After two or three days, soaking the joint in hot water, or, better still, a strong solution of vinegar and salt, applied just as hot as can be borne for ten or fifteen minutes, three times a day, does much to soften and absorb the coagulated effusions. These baths should be followed by frictions with some good stimulating liniment, the rubbing being done firmly but gently in the direction of the return current of the lymphatics. It is a most excellent practice to begin these frictions above the seat of the injury in order to empty the absorbents, so that they may the better accommodate the lymph from the injured tissues. This lymph is probably more viscid than that found circulating in normal vessels. If after ten days the thickening about the joint has not

disappeared and there still remain tender spots in moving the articulation and on making pressure, counter-irritation by iodine, or, often better still, by a fly blister, is indicated.

In two weeks' time with the treatment outlined, we will nearly always find the joint which has been quite severely sprained, in good condition and ready for work. At this period sometimes, however, owing either to the severity of the injury or to some constitutional peculiarity, it remains painful and insecure, and even the slightest movement may cause acute suffering, with swelling. The joint structures are in a condition of subacute congestion. What is now needed is absolute rest, and rest must be had or there will be a long history of disability, which may become permanent. A plaster-of-Paris splint will nearly always give the required rest. Put on properly, it will last at least a month, when, as a rule, it should be taken off and the joint examined. It may be necessary to reapply this splint one or more times, though usually four to six weeks of this treatment is enough. We are now in great danger of carrying our rest too far; and it often requires the nicest discrimination to tell when to begin forcible movements. Forcible movements are movements made with some force, let us understand, and when we are of opinion that they are necessary to break up any adherent bands and to restore motion to the joint, they should be carried out in a thorough manner. Half-hearted, inefficient attempts do more harm than good, and, by producing pain and swelling without getting motion, often doom the joint to still further rest, when rest does positive harm. The trouble at this time is, to a great extent, in the muscles, which really are the true ligaments of the joint. Frictions, with stimulating applications, together with the use of electricity, are extremely useful in restoring their tone and strength. The faradic current in these conditions is probably more generally useful than the continuous current, especially if there be simply muscular wasting and stiffness without much pain. When there is marked tenderness accompanying atrophy, the galvanic or constant current meets the indications better, not only improving the nutrition of the muscle, but removing the pain as well. The various elastic appliances which are so frequently worn after sprains have much to do very often with keeping them weak and uncertain. They are of unquestionable value at times, but their indiscriminate use without the proper medical supervision does much harm. Constitutional treatment is often necessary; rheumatic and gouty patients often require colchicum and the iodides and the salicylates. Where there is a peculiar feebleness of the power of repair without any special diathesis, iron and strychnine are of great value.

In thirty-eight hundred cases of accidents were recorded two hundred and sixty-one sprains of all kinds, or an average of one sprain in about every fifteen accidents. The least time for treatment was three

days; the longest time, eight months. The general average was a trifle over nine days. Sprains of the wrist, the ankle, the back, and the knee were the most common, there being forty wrist-joint sprains, which were under treatment about six days. Knee sprains, while common, are not so numerous as those of the ankle, there being twenty-six cases in this record, which were under treatment on an average of about twenty-three days. Of ankle-joint sprains there were seventy-two cases, which got well on an average of about thirteen days. Sprains of the back were most numerous, there being eighty, with an average of eight days for treatment.

These back injuries were, with few exceptions, marked cured on the record, though, as a matter of fact, there are, it seems, few bad sprains of the back which are ever really cured permanently. In the total of eighty cases there was not one in which the spinal cord was seriously involved. The muscles or their tendinous attachments, or the investing membrane of the fascia, were almost invariably the parts to suffer. There were but two cases of sprain of the elbow, and the same number of the hip-joint, while there were thirteen of the shoulder-joint.

ON THE IMPORTANCE OF THE EXAMINATION OF THE ABDOMEN DURING THE PUERPERIUM, WITH SPECIAL REFERENCE TO THE INVOLUTION OF THE PUERPERAL UTERUS.

McCann says (*Brit. Med. Jour.*) the process of involution in the human uterus is of great interest to the physiologist, owing to the amount of the material absorbed in a short space of time. The exact causation has not as yet been definitely ascertained. To determine the period when the uterus has returned to such a size that the puerperal woman may, without risk, assume the erect posture, two methods of investigation have been used, namely, external and internal measurement.

1. External Measurement.—Where the distance between the fundus uteri and symphysis pubis is measured, together with the breadth from side to side at the widest part.

2. Internal Measurement.—By means of the uterine sound, to determine the length of the cavum uteri.

To the first method few objections can be raised, but to the second the dangers of infection must always retard such a procedure, more especially where a series of observations can be made, for example, in maternity hospitals. Serdukoff employed external measurement, giving his reasons against the internal method, as follows:

1. From the curvature of the sound being always the same, and from the fact that we have a varying axis of the uterus corresponding to the curvature of the sound, it follows that we do not by this method ascertain the natural length of the uterus as it lies antelected or anteverted, but only an artificial length as it is straightened out.

2. The sound is not always easily introduced, and you can never be certain that at each observation the point touches the same part of the fundus.

3. This method is not unaccompanied with danger, however carefully it may be employed.

To these I would add a fourth:

4. The diminution of the uterine cavity is not proportionate to the diminution of the uterine tissue, being much more rapid. This I have proven by examination of puerperal uteri post-mortem.

It is clear then that the most accurate results would be obtained by combining the two methods. However, for all practical purposes, the external measurement is sufficient, and, on this account, my observations will be confined to it.

METHOD.—In a series of patients the measurement of the distance between the upper border of the symphysis pubis and the center of the fundus uteri was taken by a tape measure drawn tight. These measurements were obtained daily at the same hour, due attention being paid to the condition of the bowels and bladder. Cases in which there was evidence of septic trouble were excluded.

Until the uterus has become a pelvic organ, no patient should, after her confinement, be allowed to assume the erect position. This seems to me a scientific method of teaching, and stands in strong contrast to the teachings that a woman should get out of bed on a certain day, and should be permitted to walk on another fixed day. I would, therefore, insist on an abdominal examination being made in every case before a patient is allowed to assume the erect posture.

The evils attendant on the assumption of the erect posture too soon after labor or abortion must be impressed upon the mind of obstetric practitioners. How often do we meet with cases where constant bearing-down pains, discharge, and a train of symptoms which are associated with uterine disease can be traced to a confinement or miscarriage, after which sufficient rest in bed had not been enjoined? Although the importance of rest has been urged by many writers, yet the frequent recurrence of cases of subinvolution shows that this advice has not been followed.

The causes which govern what we may conveniently term "normal involution," have not as yet been ascertained. As is well-known, for a few hours after labor the uterus is contracted, expanding later, and followed, from day to day, by a gradual diminution in size. In this process there are two factors at work, namely, contraction and retraction, with the result that the uterus returns nearly to its pregestation size in six weeks. At the same time, the uterus of a woman who has borne a child is usually larger than the nulliparous uterus.

Although we do not yet understand the laws which govern the rate of

involution in the puerperal uterus, there is abundant evidence of individual variation—for example, where women under the same condition are observed. It is known that certain factors do influence the rate of involution. Amongst these we have:

1. The effect of the prematurity of labor. Here, in all probability, the uterus is not prepared for the work which it is suddenly called upon to undertake, and, therefore, we expect to find a diminution in the rate of involution.

2. The length of the labor affects the rate of involution during the earlier days of the puerperium.

3. The rate of involution is greater during the first week of the puerperium.

4. The influence of lactation: It is universally accepted that the suckling of the child hastens the involution of the uterus by promoting uterine contractions.

In conclusion, let me again insist on the careful examination of the abdomen during the puerperium, to determine:

1. The position of the uterus.
2. The presence or absence of a uterine new growth, for example, a fibroid.
3. The condition of the Fallopian tubes, which are easily palpated during the first week of the puerperium.
4. The presence or absence of ovarian new growths.
5. The position and degree of distension of the bladder.
6. The condition of the intestines.
7. The presence or absence of any peritonitic or cellutitic inflammation.—Medical Review.

THE ACTION OF HOT-AIR BATHS IN ALBUMINURIA.

The *Gazette hebdomadaire de médecine et de chirurgie* for August 27 publishes a report of a recent meeting of the Congrès française de médecine, at which M. Carrieu presented a paper on this subject. The author stated that he preferred this treatment to the use of vapor baths and to that of hot baths, which did not produce sweating. The hot-air baths, he said, produced a sweating which relieved the kidneys by directing toward another tract a part of the substances which obstructed the kidneys and should be eliminated. Furthermore, the application of heat to the skin regulated the interchanges as all other excitants did, and patients with albuminuria were often subjects in whom combustion was deficient, or deviated from the normal type. The hot-air bath filled two principal indications: It relieved the kidney by the abundant sweating which it produced, and regulated the organic interchanges.

The immediate physiological effects of this treatment, said M. Car-

rieu, showed themselves by a sensation of heat, which was not at all disagreeable, and an abundant sweating, which was accompanied by an acceleration of the pulse and an elevation of temperature. Respiration was not at all affected. No symptom was produced, except some palpitation and headache during the first baths, which lasted about an hour; sweating was the only symptom that persisted for a greater length of time.

The therapeutic effects were manifested by the changes in the urine, the quantity of which diminished on the day after the bath, and a rather intense polyuria which supervened on the following day. The density of the urine was in inverse proportion to its quantity. The urea scarcely underwent any modification. The rate of albumin greatly diminished on the day after the bath, but it increased on the following days, although it did not return to the former quantity. Gradually, however, this diminution became persistent, and finally there was complete disappearance of the albuminuria.

Hot-air baths, said the author, were indicated in cases of subacute and chronic nephritis in epithelial forms; they were, however, contraindicated in the vasculo-connective forms, and when arteriosclerosis, a skin disease, or a nervous condition existed.—*New York Medical Journal*.

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THERAPEUTICS.

ARTIFICIAL FEEDING BY THE NOSE IN INFANTS.

In the *Journal des Praticiens*, of May 2, 1896, Saint-Philippe, of Bordeaux, recommends this method in feeble or premature infants, or in those suffering from lesions of the mouth. He states that its technique is by no means difficult, the rubber tube being introduced through the nose and by this means a large quantity of liquid nourishment being passed into the stomach. The tube is passed into the back of the nose and down the throat, rapidly, in order to avoid irritation of the pharynx, which causes gagging or vomiting. He believes this method is useful, particularly where tracheotomy has been performed or where there is paralysis of the muscles of deglutition. The child is placed flat upon its back across the knees of the nurse, the head also being prone. Care should be taken, if the infant is very young, that too much liquid be not introduced into the stomach at one time, and also that the liquid be not too strong in nourishment. Carefully sterilized milk should be employed, or, in the case of older children, the operation, free drainage of the cavity and possibly removal of the internal jugular vein.

As a preparation for these operations the teeth should be repeatedly and thoroughly scrubbed, and the patient should use a mild antiseptic gargle. Iodoform packing is employed for twenty-four hours to stop oozing, but is withdrawn the day after operation, and the mouth is frequently washed with weak antiseptic solutions. The wound must be drained through the most dependent part of the skin incision. The patient is propped up as soon as possible. In severe cases the patient is fed through the stomach-tube, one being left in at the time of operation for three or four days.

The list of cases reported shows but four cured. This cannot represent the proper percentage of cures, since many of the patients were lost sight of. With great care, and guided by experience, Cheyne holds that we can look forward to a lessened mortality and distinct improvement as regards recurrence. The most unfavorable cases are those in which the disease has spread to the base of the tongue, the mortality here being 33 per cent.

Cancer of the rectum is characterized by the moderate degree of malignancy and the tendency toward late recurrence and metastasis. Cheyne holds that in a large proportion of cases the hope of benefit from a radical operation is so very slight that we can without hesitation exclude them from the radical procedure, and at the same time help them much by colotomy; and thus the cases in which the choice of an operation has to be left to the patient are comparatively few. In most instances after attempts at radical operation, there has been incontinence, in some fistula; in many, stricture has resulted or fecal extravasation has occurred. The mortality of the radical operation is high, averaging about 8 per cent. for the perineal, about 18 to 20 per cent. for the sacral operation. The mortality of colotomy is practically nil.—The Therapeutic Gazette.

HYDROZONE IN GASTRIC AND INTESTINAL DISORDERS.

Dr. John Aulde, of Philadelphia, Pa., says:

A period of nearly twelve years has elapsed since I first began the clinical use of hydrogen dioxide, generally referred to at that time as the peroxide of hydrogen. In 1887 I published a paper giving a detailed account of several cases in which it had been employed by inhalation, but even then I was thirty years behind the report of Dr. (now Sir) Benjamin Ward Richardson, of London, who had made a thorough investigation of its antiseptic, detergent, and healing properties. Notwithstanding the fact that this preparation had been known to the medical profession for that length of time it had achieved little or no reputation. This, however, may be explained by the fact that the discovery preceded the dawn of bacteriology. Indeed, I was one of the early contributors to medical liter-

ature relating to the clinical value of this product, and since that time I have published a number of articles, embracing practically every application, both medical and surgical, to which hydrogen dioxide is adapted.

In the present communication it is my object to direct the attention of the profession to its special value in the treatment of gastric and intestinal disorders. In gastritis, for example, there is no antiseptic which can be given with so much benefit as this remedy, because its effect is immediate, and even in considerable doses it is absolutely harmless. The same is true in regard to its employment in typhoid fever, cholera infantum, and Asiatic cholera. In the latter disease its efficacy has been thoroughly demonstrated by a number of well-known physicians, and its applicability in cholera infantum is well known to those physicians who have given careful attention to the most modern methods in the treatment of this class of cases.

The following brief notes will be sufficient to indicate the availability of this remedy in the treatment of the disorders already mentioned, although, in view of the fact that hydrozone is a more concentrated product, and with a permanent solution, this latter remedy should have the preference. It contains at least double the volume of nascent oxygen which has heretofore been the standard for the medicinal peroxide of hydrogen.

In gastritis, either acute, subacute, or chronic, we have to deal with an unhealthy condition of the lining membrane of the stomach. The inflammation is attended with an increased output of mucus, which seriously interferes with the normal functions of the peptic glands. By the introduction of a small quantity of hydrozone, in the strength of one part to thirty-two parts of boiled or sterilized water, this objectionable mucus is at once destroyed by the action of the oxygen which is released, and the contents of the stomach remaining are promptly discharged into the small intestine. A patient suffering from gastritis should take at least half an hour before meals from two to four ounces of diluted hydrozone (one to thirty-two) and lie on the right side so as to facilitate the action of the stomach in discharging its contents*. The antiseptic properties of hydrozone thus used are sufficient to destroy the micro-organisms and leave the stomach in a healthy condition for the absorption of nutritive pabulum. All forms of fermentation are promptly subdued by the active oxidation resulting from the liberation of nascent oxygen. The patient is then in a condition to take suitable food, which should be nutritious and easily digested, liquids being preferred until the active symptoms have subsided.

* In chronic cases with a large output of gastric mucus, and particularly in gastric ulcer, concentrated solutions are not well borne at first, owing to the formation of oxygen gas, but this difficulty disappears with the continued use of the remedy, and no treatment of gastric ulcer can be regarded as complete without the local employment of hydrozone.

Later, small portions of solid food can be ingested, but all food stuffs of a starchy character must be thoroughly masticated, in order to secure the action of the salivary secretion upon the starch granules, breaking them up, and lessening the tendency to fermentation in the stomach. After taking a meal, a patient with gastritis should follow it with medicinal doses of glycozone, which contain, in addition to the nascent oxygen contained in hydrozone, a percentage of glycerin which favors osmosis and assists in re-establishing the functional activity of both the peptic and mucous glands of the organ.

In the treatment of cholera infantum, typhoid fever and Asiatic cholera, the same general plan should be adopted in dealing with the stomach, always bearing in mind the necessity for having the patient remain in the recumbent position and on the right side for at least half an hour after the ingestion of the solution. In addition, however, to the preliminary treatment of the stomach, the same solution (one to thirty-two) is used as an injection into the lower bowel, care being exercised to insure its introduction as high up as possible. This can be managed by having the patient lie on the left side, with the hips well elevated, and the employment of a long, flexible rectal tube. In this manner we secure and maintain an antiseptic condition in both the stomach and large intestine, the importance of which will be understood when we consider the large number of micro-organisms which grow under these favorable conditions with such remarkable rapidity.

When deemed advisable, the solution introduced into the lower bowel may be combined with large quantities of either hot or cold water, which enables us to obtain the benefits of irrigation in addition to the antiseptic effects. These irrigations may be employed as frequently as deemed advisable by the medical attendant, but they will usually prove satisfactory if administered at intervals of four hours.

Although brief, it is believed this communication will prove serviceable to a large number of practitioners who have hitherto found serious difficulties in counteracting the mephitic influences of bacteria in this class of disorders, and the clinical virtues of the remedy being now so fully recognized, no one will hesitate to adopt the methods suggested, which may be conveniently carried out in addition to the usual routine treatment.—N. Y. Med. Journal.

ON THE STIMULATION AND MEDICATION IN VARIOLA.

Dr. Llewellyn Eliot has contributed to the Virginia Medical Monthly a very interesting paper on his fifteen years' experience in small-pox. His remarks regarding treatment are chiefly the following:

Patients with this disease are able to take larger amounts of whiskey than those in the general run of diseases without showing the intoxicating

effects, and an allowance of sixteen ounces in twenty hours during the height of the disease is not too much; so, when whiskey is given, it should be given with a free hand. Morphine, to have any appreciable effect, must be given in half grain doses, but if lung complications exist, it is better not to use it at all. The dose of half a grain applies only to the illness and not to convalescence.

Dr. Eliot states that he has used calcium sulphide extensively in small-pox, and that it must be given in large doses. In the last outbreak of the disease he used doses from one to 4 grains every three hours, and continued them until there was some effect upon the pustules, when the dose was diminished, but never to less than a grain, except to children. Concerning the peculiar smell in this disease, he says it often aids in the diagnosis. It can not, however, be described, and it is not always present. There are certain omens about this class of patients which, while they are not assured and invariable in their appearance, are, he says, of very grave prognostic import. For instance, Dr. Eliot has always noticed, in moving a patient to the hospital, that those who voluntarily covered their faces and heads, without any suggestion to do so, almost invariably died. When the face of a white patient assumes a dark, leaden hue during the first days, death may be predicted almost with certainty. Those patients who presented great swelling of the face and head in the beginning always suffered from severe attacks. There is a peculiarity of the walk which is very ominous; the patient lifts the feet high, as if he were ascending stairs, and this applies to the early eruptive stage.—The American Therapist.

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MISCELLANEOUS.

"JANUS" is the name of a new international bi-monthly periodical to be devoted to the history of medicine and to medical geography. The new journal is published in Amsterdam under the editorial charge of Dr. H. F. A. Peypers. Among the list of associate editors appear the names of the following Americans: Surgeon-General Dr. George M. Sternberg, of the United States army; Dr. William Osler, of Baltimore; and Dr. William Pepper, of Philadelphia. In the list of collaborators are Dr. L. C. Gray, of New York; Dr. J. Guit  ras, of Philadelphia; Dr. A. Jacobi, of New York; Dr. Charles Jewett, of Brooklyn; Dr. L. C. Lane, of San Francisco; Dr. A. E. Regensburger, of San Francisco; Dr. N. Senn, of Chicago; Dr. F. A. Shattuck, of Boston; Dr. J. T. Whittaker, of Cincinnati; and Dr. Charles Denison, of Denver. The first number, that of July-August, 1896 opens with an introduction in French, entitled "Janus Redivivus," by Prof. B. J. Stokvis, of Amsterdam. This is followed by articles on "Variolation and Vaccination," by Dr. J.

Petersen, of Copenhagen; "Study of Leprosy in Iceland," by Dr. E. Ehlers, of Copenhagen; "History of the Functions of the Cerebral Cortex," by Professor Adamkiewicz, of Vienna; "Vaccination against Snake-Poison," by Dr. Calmette, of Lille; "The Early History of Lanolin," by Professor Husemann, of Göttingen; "History of Diphtheria in Denmark," by Dr. J. Carlsen, of Copenhagen; "A Pseudo-Precursor of Pasteur," by the editor, Dr. Peypers; and the "Medical Jurist of Three Centuries Ago," by Dr. R. Landau, of Frankenberg. These articles are written in English, French, or German, according to the nationality or inclination of the authors. The number closes with a number of abstracts on subjects relating to medical geography and the history of medicine.

SLEEPLESSNESS.—In the use of sedatives we must be cautious and not use them *ad libitum*. The writer, in a paper on "Sedatives in the Treatment of Insanity" (1892, Hospital Bulletin of Minnesota), said, "Each case is a 'law unto itself,' and as such requires patient and persistent study ere we commit the folly of giving a hypnotic, when more simple and efficacious methods would produce satisfactory results." You cannot cure sleeplessness by drug treatment; the drugs simply conserve nervous energy and act as valuable assistants to the building-up process, necessary to cure the sleeplessness. Sedatives act, as before stated, by placing the patient in a position to go to sleep, and nature does the rest.

In our experience we have learned to rely upon the bromides, chloral, cannabis indica and hyoscyamus as sedatives, which, if judiciously used, bring order out of chaos. The bromides lower the sensibility of the brain, and thus promote sleep. The single salts can be used, but in the writer's experience, where a sedative is indicated in sleeplessness, it is better to combine them, and when there is any excitement, add chloral. Cannabis indica is a sedative which is but little used by the general practitioner, and for the reason that it is misunderstood, misrepresented, and as a result never used as it should be. Clouston, Mathison and Echeverria have taught us their value. Hyoscyamus is another sedative, the value of which is not appreciated, a drug which is endorsed by Budde, Brush, Krafft-Ebing as a hypnotic. Now, these valuable sedatives, when combined, give us a thoroughly reliable and satisfactory agent, with which to treat sleeplessness, and in the writer's experience no more elegant or reliable preparation is before the profession than that of bromidia, in which is combined, in proper portion, the bromide of potassium, chloral hydrate, hyoscyamus and cannabis indica. We feel that the profession can always rely upon this combination, and find it especially useful in the treatment of sleeplessness.—The Medical Fortnightly.

NEW METHOD OF "DOCTORING" MILK.—It has been discovered that milkmen in Bordeaux, France, were in the habit of using certain yellow

powders to preserve their milk. M. Denigès succeeded in obtaining possession of three samples of this powder and subjected them to chemical analysis. "This analysis showed that two of the powders were composed wholly of neutral chromate of potash, that the third was a mixture of one part of bichromate of potash and two parts of neutral chromate, and that the suspected milk had been adulterated with the latter in the proportion of 0.30 gm. to the liter (5 grains to the quart). The alkaline chromates are powerful antiseptics, capable, even in small quantities, of retarding lactic fermentation if not of stopping it completely. But because of the pernicious action of these salts on the organism they ought to be completely excluded from food substances, and particularly from milk, of which many young children drink relatively large quantities. These chromate powders are sold in packages of 2 gm. (30 grains), each of which should suffice to preserve about fifty quarts of milk, which would correspond to 0.04 gm. (0.6 grain) of antiseptic to the quart, evidently a minimum proportion. But it is likely that the milkmen will be induced to augment this quantity, either because it is insufficient to preserve the milk during the high temperatures of summer, or in order to restore the color of the liquid, due normally to hæmolutein, a yellow pigment, when it has been lessened by skimming the cream, adding water, or by inferiority of quality, and thus to cause a mediocre product to pass for a milk of greater value." Knowledge travels rapidly, and even American milkmen may not be above such practices. Let us hope that the inspector may be as canny.—Medical News.

TAUROCHOLATE OF SODIUM, according to Sorrentino's experiments upon animals, is to be ranged among the cardiac remedies. Its action is marked by a slowing of the beats and lowering of the blood pressure. In large doses it always diminishes pressure, but produces a more or less noticeable acceleration of the beats. The slowing of the pulse is due to an excitation of the moderator ganglia. The acceleration which follows the use of toxic doses is due to paralysis of these ganglia. The diminution in pressure is in connection with excitation of the moderating apparatus of the heart and with the vascular dilatation. Toxic doses lower the pressure because they paralyze the myocardium. Vascular dilatation is a consequence of a peripheric action of the drug. Prolonged use of taurocholate of sodium alters the blood's composition in diminishing the number of red globules and the proportions of hæmoglobin.—La Medicina Contemporanea, January, 1896.

UTERINE CANCER.—Dr. Kessler believes that the diagnosis of cancer is not very difficult in the majority of cases. The text-books lead us to believe that it is always associated with cachexia; the suffering expres-

sion of the face, very frequent hæmorrhages, fetid discharges, etc., are not always present. But a serous discharge, a bleeding between menstrual periods, and particularly a hæmorrhage after the menopause, should make one very suspicious of malignant disease. He deprecates the practice of giving ergot or styptics in uterine hæmorrhages when one suspects carcinoma, because while using these drugs the disease is progressing and valuable time is lost.—St. Petersburg Med. Woch., September 28, 1895.

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MEDICAL NEWS AND NOTES.

DARTMOUTH MEDICAL COLLEGE.

Dr. William Thayer Smith, professor of physiology in Dartmouth Medical College, has been appointed dean of that institution to fill the vacancy caused by the death of Professor Carleton P. Frost. Professor Gilman D. Frost has been chosen secretary and treasurer.

CHANGE OF NAME.

The editors of Mathews' Medical Quarterly announce that, with the January issue of that publication, its name will be changed to "Mathews' Quarterly Journal of Rectal and Gastro-Intestinal Diseases." This is a change which has been deemed necessary for some time, as it is essential that the title of a medical journal should convey to the reader an idea of its contents, and this has not been the case with its name from the beginning.

There will be no change in the policy of the journal in the least. As it will continue to be the only English publication devoted to diseases and surgery of the rectum and gastro-intestinal tract, the articles which will appear in it will be limited to these subjects. The journal will continue to be edited by Drs. J. M. Mathews and Henry E. Tuley, and published in Louisville, Ky.



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Scientia et Veritas Sine Timore.

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Articles for publication will be received with the understanding that they are contributed exclusively to this journal. Reprints will be furnished at actual cost, orders for which should accompany the manuscript. Authors of accepted articles may receive twelve copies of the issue in which they are published. Necessary illustrations will be furnished without expense to authors when suitable drawings or photographs are furnished.

THE TREATMENT OF HAEMOPTYSIS.

At the meeting of the American Climatological Association, at Lakewood, N. J., on the 13th of May, 1896, this subject was introduced by Dr. Charles E. Quimby, of New York. It is of sufficient importance to warrant the reproduction of the special article in the Medical News, for September 12, 1896, rehearsing the details of the discussion; and as soon as we have the space available we shall probably do this. In the meanwhile, a perusal of this discussion brings out some exceedingly interesting differences of opinion between well-known medical men. Dr. Quimby believes that the possibilities of influencing the arrest of hæmoptysis must be sought in one or more of three universally accepted lines: 1st, aggravation of vascular tension; 2d, increase in the coagulability of the blood; 3d, mechanical and chemical aids to clot formation; and in his summary of his own treatment he claims nothing new except that his therapeutic measures are based upon a well-defined principle, have a definite object in view, and form a harmonious whole. These are, 1st, rest; 2d, morphine; 3d, cocaine or other vascular sedative; 4th, dry salt and a saline cathartic; 5th, counter-irritation; 6th, obstructed expiration. He excludes, 1st, astringents; 2d, ice; 3d, stimulants; and 4th, a vaso-constrictor.

The question submitted to the various practitioners was this: Will you state just what you would do if called to a case of moderate or severe

hæmoptysis, it being assumed that it is a bronchial hæmorrhage dependent upon tubercular disease of the lung? It being understood that the answers were not to include whatever might be done as a placebo for the patient and friends. We will give a specimen of the answers, showing the diversity of opinion.

The very first answer quoted says that such hæmorrhages are never fatal, and are dangerous to life only from succeeding extension of the tubercular processes; secondly, no therapeutic measure has any appreciable effect in determining the arrest of the hæmorrhage. The next authority insists upon absolute rest in connection with opium, and generally gives ergot. He also uses ice applied to the chest, when the hæmorrhage is localized and forms a congested area about the tuberculous deposit. He never uses mineral astringents. Another authority lays no great stress upon rest, unless the hæmorrhage comes only with high temperatures, or there is reason to believe that the bleeding was started by exercise or physical strain. He relies almost entirely upon acetanilid and atropine, which he gives about every three hours, in doses of from three to four grains of the former, combined with a hundredth of a grain of the latter. He does not apply the astringents or ergot, and says nothing of external applications.

The treatment, as deduced from the detailed reports of nine medical men, by a majority of eight to one, is: 1st, rest; 2d, morphine; 3d, vascular sedatives; 4th, ice; 5th, saline cathartics; 6th, ligation of the limbs; and 7th, counter-irritation in place of ice. It excluded the use of astringents or vaso-constrictors. So much for the belief of the New York physicians quoted.

The report from Philadelphia, as given in abstract in this article, includes rest, mental and physical, the local application of ice, the use of opium, and, with considerable doubt as to their value, the use of astringents, morphine, ergot, turpentine, gallic acid, fluid extract of hydrastis, the oil of erigeron, acetate of lead, sulphuric acid, and lycopodium being included in this list.

Boston gives quite as great a variety of opinion as to the methods to be pursued. A physician from Colorado Springs thinks that the failure with ergot is due to its irregular and insufficient use and administration by the mouth, but acknowledges that it is absolutely useless in some cases, and, as a matter of fact, there is hardly a therapeutic measure mentioned which is not as heartily condemned by some one of the authorities quoted as it is commended by another.

From the whole report, we may not improperly glean, at least, this fact, that therapeutically very little can be done to actually influence the amount of hæmorrhage. Absolute quiet and rest is certainly a prominent feature in the treatment of the large majority of the men quoted; and

if we add to this morphine, used hypodermatically, in sufficient quantities to allay coughing, relieve pain and give rest to the patient, we can feel fairly well assured that our armamentarium therapeuticum, is sufficiently complete. It is not likely that those of us who have found the mineral acids of value in cases in which ergot has been tried and found to be worse than useless, will give up our belief in the efficacy of such drugs, and vice versa. The same might doubtless be said of turpentine, gallic acid, acetate of lead, ice, local and by the mouth, etc., etc.; but it will be a great comfort to the general practitioner, who finds his hypodermatic case with perhaps morphia tablets his only available resource, to know that in the opinion of a great many excellent men, its contents offer the most, if not the only means of improving the patient's condition.

REVIEWS.

Anatomy, Descriptive and Surgical, by Henry Gray, F.R.S.; a new edition, thoroughly revised by American authorities from the thirteenth English edition. Edited by T. Pickering Pick, F.R.C.S., with 772 illustrations, many of which are new. Lea Brothers & Co., Philadelphia and New York, 1896.

I do not know how we can better serve the profession in the matter of information as to Gray's Anatomy, that is, the edition we are now considering, than by giving the publishers' "Notes to the new American edition."

"In arranging for the new edition of Gray's Anatomy, the publishers have sought the assistance of gentlemen thoroughly qualified, both as anatomists and teachers, and every page has had the benefit of their critical scrutiny. The student will, therefore, find in this new edition not only a general revision of the work as a whole, but also entire changes in certain departments, in which investigation has been especially active during recent years. The sections which have been re-written are those on the brain, the teeth, and the abdominal viscera, exclusive of the genito-urinary tract; the first two by Dr. Bern. B. Gallaudet, who has also had charge of the general revision; the last by Dr. Fred. J. Brockway; while those on histology and development—a feature peculiar to Gray, and of obvious value—have been revised by Professor J. Playfair McMurrick. The splendid series of illustrations which have always distinguished Gray has been enriched in this new addition with no less than 135 additional engravings. These illustrations have long been known as the most effective and intelligible presentations of anatomical structures, and, in the present issue, it is believed, that this supremacy will be fully maintained.

The practical application of anatomical facts in medicine and surgery has always been a prominent feature of the work, and this distinctive characteristic has again received the special care of the editors. In short, this edition is presented to the medical public with the confident expectation that it will be found worthy in every respect to maintain the excellent position which the work has for so many years enjoyed, as the most convenient and intelligible exposition of this subject."

It would be absurd at this late day to take up the detailed consideration of Gray's Anatomy. It was good when it was first published in 1858, and each of the many editions since that time have done nothing but add to the value of the work, as well as to the reputation of the author. The colored plates, so frequently employed throughout the work, are thought by many to be of especial service; at least, we can readily conceive that the student can make and retain a mental image of the structures so presented easier than when the cuts are printed in a single color. Really, no one but the revisers can begin to realize the amount of labor and time bestowed upon the preparation of a new edition of any book of considerable extent, and this is eminently true of a work like anatomy, which is crowded with interesting, as well as intricate details from cover to cover. Nothing that we can say would add to the value of this work as a text book, nor is it likely that there is anything we could say which would materially extend its field of usefulness.

The Hypnotic Magazine, Devoted to an Investigation of the Science of Hypnotism, Its Uses and Abuses, and Its Therapeutic Possibilities; edited by Sidney Flower Psychic Publishing Co., Chicago. Price, \$1 per annum.

We did not see the first number of this magazine, but we are told in the present announcement that it was received with so much favor by the public, that the management decided to reduce the subscription price to \$1 a year, without making in any way a change in the magazine itself. The field of hypnotism is as uncertain as it is interesting and obscure. In spite of the work done, particularly in France, there has been very little definitely determined, and reduced to scientific form, in this field of knowledge. As a matter of fact, it has never been absolutely and entirely assigned to a definite field of science. In many ways it is related closely, if not actually, in its entirety, properly assigned, to the field of psychology. It has so many therapeutic applications that it cannot be denied a place in physiology. We are, therefore, not unprepared to reap a considerable amount of information from this new journal in this field; and if we can judge by the volume at hand, which has four articles by doctors of medicine, we have a right to expect to find the succeeding numbers of interest to medical men.

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No. 6.

ORIGINAL ARTICLES.

A CASE OF PROTRACTED LABOR.

By J. N. UPSHUR, M.D., Richmond, Va.,

Professor Practice of Medicine Medical College of Virginia.

Rupture of the Uterine Wall—Concealed Hæmorrhage—Subsequent Extensive Sepsis and Mural Abscess, etc., Ending in Recovery.*

Mrs. H., æt. 40, of good health prior to two months before delivery, when she had an attack of dysentery. I saw her at that time. She had a recurrence of the attack twice, but treated herself with the same remedies prescribed by me during the first attack. With this exception, her pregnancy had been an uneventful one.

Labor came on suddenly at 7 P. M. September 11—pains so active and strong that I was twice sent for within an hour. When I reached my patient at 8 P. M. she looked pallid and showed evidence of extreme suffering—pains were strong and regular, coming on every few minutes. Digital examination revealed a cervix *very rigid*, thick and about two inches long, through which could be felt the vertex, presenting in the first position. The pains, though violent and causing much suffering, made little impression in dilating the rigid cervix. To procure rest and relaxation of the cervix, about 12 P. M. I administered a hypodermic of sulphate morphia, grain one-fourth, sulphate atropiæ, grain one one-hundred and fiftieth. This procured her some respite from suffering for three hours, when pains again became active. Cervix had slightly softened. She was now given chloroform, but only with the effect of stopping pains. A second hypodermic was given at 7 A. M., and I left the patient for three hours.

* Read before Richmond Academy of Medicine and Surgery, October 13, 1896.

On my return at 11 A. M., I found cervix relaxed and dilatable, and pains active and regular. Patient looked pallid, with feeble pulse, and had clammy skin. But that she had had three exhaustive attacks of bowel trouble and a weating labor from the beginning, I should have suspected concealed hæmorrhage. Chloroform was again administered, and she was normally delivered at 12:45 of a still-born male infant, weighing nine pounds. She had last felt the motion of the child just prior to the onset of labor. There was delay in the delivery of the placenta, and the uterus was in a state of complete inertia. Examination showed the placenta detached, and it was easily removed; introduction of the hand being followed on delivery by a double handful of coagula. It was evident that partial detachment of the placenta had taken place prior to the birth of the child.

The uterus remaining obstinately relaxed, the hand was passed into the cavity, which presented a feeling of a ragged bag, while on the right of the uterine wall, half way between its anterior and lateral portion, could be felt an incomplete *rupture* of the uterine wall in its long diameter, about three inches long, and extending four-fifths of the thickness of the uterine wall, so that a narrow escape had been made from opening the peritoneal cavity. After administration of sulphate strychnia, grain one twentieth, and fluid extract ergot (Squibbs) 3 v, with introduction of ice into the cavity, the womb was induced to contract finely. I would have preferred a hot salt solution, but it was not available, and only a septic syringe with which to use it if it had been. The patient re-acted well. Having always had a free secretion of milk, tincture of camphor was ordered applied to the breasts, beginning a few hours after delivery, extending its application well into the axillæ. This proved efficient, and no milk was secreted.

On the second and third days after delivery, temperature only rose to 99.4° F.; on fourth day it reached 100° F. Lochia profuse, offensive, of the color of dirty dish water. Free douche of hot water and borax was ordered thrice daily.

But on the morning of the fifth day, finding no improvement except temperature slightly subnormal (98° F.), the uterus was washed out freely with hot salt solution. Uterus was found above the pubis, and spongy. Ordered tincture chloride of iron, ergot and nux vomica, in full doses every four hours.

On sixth day found little change in lochia, and that seventeen napkins had been used in previous twenty-four hours; pulse fair at 90-100; temperature as on day before. Curette (sharp) was used, and a number of dirty shreds of sloughing tissue were removed.

On seventh day patient expressed herself as feeling better; pulse and temperature same as on day previous. Curette was again used, and large pieces of sloughing tissue were removed. Curette gave way suddenly,

giving sensation of entering a cavity, and was followed by a discharge of an ounce or more of thick, dirty-colored, stinking pus. I believe the rupture had healed on the surface, and an abscess had developed at bottom. The curette was freely used until discharge was slightly stained with blood. Half gallon of salt solution was run through the uterine cavity till it came away clean and odorless; patient expressed herself as feeling much more comfortable.

On eighth day, pulse and temperature same; ten napkins used; curette again applied; no shreds. Washed out with peroxide of hydrogen, followed by salt solution, and lightly packed with iodoform gauze.

Twenty-four hours after delivery the patient complained of severe headache, located chiefly in the occiput. This was relieved by two doses of phenacetin of gr. v. each, but returned when the drug wore off. Subsequently benefited by sodii bromidi gr. xx, and caffeine gr. ss. Patient had a comfortable night, has some appetite, expressed herself as free of headache, and feeling much better; said headache returned after treatment of womb. She has taken on two days full doses of quinine, but I could detect no benefit from its exhibition. Bowels have been moved on alternate days by exhibition of compound senna powder. Tongue has been clean, but pallid from beginning.

On ninth day, eleven napkins in last twenty-four hours; temperature, 100° F.; pulse, 108; had a good night, but sweated freely; appetite, fair; discharge very little offensive; curette used; $\bar{\epsilon}$ j of pus discharged from uterine cavity; came from site of rupture; uterus reduced decidedly in size; washed out freely with peroxide hydrogen, one-fourth to three-fourths hot water, followed by salt solution. Patient complained of violent frontal headache during the dressing, which passed off when completed; light packing of iodoform gauze applied.

Tenth day, eight napkins; pulse, 100; temperature, 99.4°; no odor in discharge; on removing gauze, $\bar{\epsilon}$ ss pus flowed away; uterus cannot be felt above pubis; measured three inches with probe; swabbed out with pure peroxide and replaced with gauze; complained of severe frontal headache during the dressing, which subsided when it was completed.

Eleventh day, five napkins; temperature, 99.2°; pulse, 100; on removing gauze, $\bar{\epsilon}$ ss pus; no sweating.

Thirteenth day, temperature, 99.4°; pulse, 100; no sweating.

Fourteenth day, pulse, 96; temperature, 99° F.; no flow.

Sixteenth day, pulse, 100; temperature, 98.5°; convalescence established; patient sat up an hour and a quarter.

Twenty-eighth day, patient dressed and moving about her room; says she is absolutely comfortable; no pain or weakness in back or elsewhere, except a little unsteady on her feet.

Remarks.—The above case presents first in interest, the *condition of*

the cervix at the beginning of labor, so *hard and resistant* as to give the impression of previous disease, which had not been the case, except a slight cervical catarrh, for which I had treated her prior to her sixth confinement, which had been rapid and uneventful. Pains seemed absolutely inefficient in producing dilatations until after the administration of morphine—the resistance in spite of such strong contractions being responsible for the subsequent complications. I am sure that the patient's pallor was due to concealed hæmorrhage from premature partial separation of the placenta, not appreciated at the time because of my knowledge of three attacks of dysentery in the previous two months and the suffering she had borne incident to the violent uterine action, ineffective and depressing. The inertia of the womb was simply muscular tire.

The rupture of the uterine wall in its long axis is of interest, because the almost invariable rule is that when rupture occurs it is in the transverse direction. "Boudl reported nineteen cases in 40,614 labors occurring in nine years in the Lying-in Hospital in Vienna. Jolly, in Paris, found 230 cases in 782,741, excluding from his list lacerations of the cervix. Harris estimates one case in 4,000 labors. Lusk found forty-seven deaths from this cause in New York between 1867 and 1875, inclusive, or one death in six thousand labors." (*Lusk's Obstetrics*, page 603.) I had a case of complete rupture due to an after-coming hydrocephalic head—patient dying five hours after delivery.

Hagenberger estimated the mortality at 95 per cent.; C. Braun at 89 per cent. (*Lusk*, page 603). The above facts show how rare is this complication, even though incomplete.

Another point of interest is the prevention absolutely of the milk formation by the *early* and *repeated* use of tincture of camphor in a woman who had in six previous confinements had an abundance. A long experience has proven no remedy better than the camphor in my hands. The fact that only twice did the temperature reach 100° F. in a uterus so septic as I have described is remarkable, and the efficient action in the direction of cure of free curettage, douching with salt solution and application of hydrogen dioxide in stopping suppuration, evidences the great value of this therapeutic method. The violent reflex headache, coming on during the dressing and disappearing when it was completed, is of interest, and shows plainly that the violent headache coming on twenty-four hours after labor was also reflex in character.

I deem myself most fortunate to have had such a satisfactory result in this case, and place it on record for the instruction and encouragement of my professional brethren.

210 West Grace Street.

DISEASES OF THE RECTUM AND ANUS.*

By GEO. K. SIMS, M.D., Richmond, Va.,

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Formerly this class of diseases received but little attention by the profession; consequently quacks fell heir to a great many of them. In recent years they have received more attention, but the majority of the profession do not give them as much attention as they merit. There is no class of diseases that cause more annoyance and suffering, or that patients will be more grateful for curing them, or more willing to pay for. Time will permit me to give only a general outline of the most important of them to-night.

A *careful physical examination* should be made in every case. The dorsal is the best position for external inspection and eversion of the anal margin; for parts higher up and for operation the knee-chest and the lateral or Sims' position is better. A female should always be placed in the Sims' position, for obvious reasons.

In making the examination, the tissues surrounding the anus should first be carefully inspected; after this, the interior of the rectum must be examined. This can be done either with the finger or the speculum, or both. A digital examination will be more agreeable to the patient if the finger is well lubricated and introduced gently. The best lubricant for the finger that I have used is ordinary toilet soap; it fills the cracks around and under the nail and prevents the fecal matter from sticking. This can be easily washed out, and you get rid of the bad odor, which is a very important consideration. If there is much soreness about the parts, carbolized vaseline will be much more agreeable to the patient.

In introducing the finger, notice the amount of resistance offered by the sphincters. The internal is an involuntary and the external a voluntary muscle; they are separated by a well marked interspace. A firmly contracted sphincter is met with in cases of fissure ani; a loosely contracted one may be due to atony or paralysis, induced by repeated stretching by a polypus, hæmorrhoids, or prolapsus. After passing the sphincter, the finger enters a large cavity called the rectal pouch, which is apparently without shape or form; if empty, the anterior and posterior walls are in contact. A great aid to digital examination is to fill the rectum with air or water, introduced by an ordinary bulb syringe. This puts the wall of the rectum on the stretch, so that any diseased condition can more easily be detected. After the digital examination, it may be necessary, for purposes of diagnosis or treatment, to introduce the speculum; in many cases it will be necessary to give an anæsthetic to do this, or even to insert the finger.

* Read before Richmond Academy of Medicine and Surgery, October 13, 1896.

1. *Hemorrhoids*.—The first subject I wish to review is *hemorrhoids*. Of these there are two varieties—external and internal—depending on their relation to the sphincter. *External piles* are venous or cutaneous. Of the former, there are two kinds; first, a varicose condition of the external hæmorrhoidal veins; this is very common, and usually requires no treatment; the second is the thrombic pile, due to a thrombus in the external hæmorrhoidal veins. A *thrombic pile* is tense, hard, and very painful; it usually comes on suddenly, and the bluish appearance of the thrombus can often be seen. The treatment may be palliative, which consists in keeping the stools very soft by laxatives and enemas, and the local application of soothing lotions or unguents, such as lead and opium wash, fluid hydrastis or hamamelis and lead-water, or unguents of belladonna, opium, etc., followed by warm fomentations. If the size of the tumor or the pain seem to justify it, immediate relief may be given by incising the pile and turning out the clot—then applying a pad of antiseptic gauze and firm pressure by a “T” bandage to prevent the cavity from refilling.

Of *cutaneous piles* authors recognize three varieties: First. Redundant cutaneous piles. These are common in persons having internal piles, and are said to be diagnostic of that condition, with weakening of the internal sphincter. The second form is the hyperplastic pile; this is due to a hyperplasia of the connective tissue, from abrasions, fissure or ulceration. It is most often seen at the posterior border of the anus in connection with fissure ani—in fact, it is pathognomonic of that disease. The third form is a hypertrophy of the normal radiating folds of the anus, the result of eczematous inflammation. The treatment of these conditions consists in removing the cause; then, if necessary, a portion of the redundant tissue may be excised and treated antiseptically. External piles should never be injected, as it can do no good and causes unnecessary torture.

Internal hemorrhoids are vascular tumors, composed of dilated veins, capillaries and small arterioles. Ordinarily, they lie just within the anal opening, but they may extend as high as two inches from the anus; they may be single or multiple. They are caused by an increase of blood pressure about the rectum with obstruction to the return circulation, arising from diseases of the heart, lungs, or liver, enlarged prostate, stricture of the urethra, stone in the bladder, phimosis, cancer, or stricture of the rectum, and chronic constipation. Symptoms—a feeling of weight, itching, tenesmus, and pain, which may radiate to the genital, or other pelvic organs. At first, these are slight, but they gradually grow worse. The piles begin to protrude when at stool; later, a portion of the mucous membrane may prolapse. If they are not replaced, the contraction of the sphincter muscle will cause them to become swollen and congested, and gangrene may result. Rupture of the thin mucous membrane cover-

ing them causes hæmorrhage—this may be very slight, or be several ounces. The blood is much redder than blood which escapes higher up than the rectum. The bleeding often relieves the pain and local symptoms for a time; but if it occurs frequently, as it often does, may cause serious anemia. In long standing cases, the sphincter becomes so relaxed that it allows the protrusion of the piles to exist almost constantly.

The diagnosis, when they are protruding, is simple enough; but when they are not filled with blood, your finger may scarcely feel them. In that case, after emptying the rectum with an enema, make the patient bear down as if at stool; at the same time, draw the anus open with your fingers. They may now be seen or felt, as they become distended. The smooth folds of mucous membrane of prolapse will hardly be mistaken for piles, as they lack the bunched appearance and the purplish color.

Rectal polypus, when protruding, is harder than piles or prolapse, and has a distinct pedicle.

Treatment.—The majority of cases can be made very comfortable, if taken in time, by palliative measures; they consist in keeping the bowels open by diet, exercise, salines, laxatives and enemas. Try to remove the cause by appropriate treatment. Locally use astringent injections and unguents; these should be pushed well up into the rectum. When these measures fail to give relief, a more radical treatment becomes necessary. Moderately severe cases may at times be cured by dilatation of the sphincter, by means of the two thumbs. This requires an anæsthetic, and must be done thoroughly. When the patient cannot take chloroform, or remain in bed for a few days, a cure may be effected by injecting a few drops of carbolic acid into the center of each pile, treating only one at a time. This is tedious and uncertain at best, and not to be recommended. A better method of treating such cases is the one described by Dr. Earle, of Baltimore; this consists in injecting cocaine, applying a clamp, cutting off the pile, and stitching the edges together with a continuous suture of catgut. By treating only one pile at a time by this method, the patient need not lose any time from business.

When, however, the piles are large and numerous, they had better be all removed at one sitting, by one of the standard operations, which are the clamp and cautery, ligation and Whitehead's. Of the three, the clamp and cautery is the one most generally used, being, at the same time, simple, safe and effective. I will not enter into the details of these operations, but will mention a few practical points in the management. The patient should have a brisk cathartic two days before, and an enema the day before, and on the day of operation. The sphincter should be well stretched and temporarily paralyzed at the time of operation. No packing is necessary afterwards except a good external pad and a "T" bandage.

The bowels can be moved on the third or fourth day with salines

or enemata. The patient must be kept in bed five or six days, and in a week can be discharged.

2. *Anal fistulas* may be complete or incomplete—the latter are external and internal. They result from a peri-rectal or an ischio-rectal abscess, which was not opened early enough to prevent the formation of an orifice in the bowel. The sinus is prevented from healing by the passage of fecal matter and gases, which keep up the irritation. The fistulous track is usually tortuous, and there are frequently blind sinuses leading off from it into the cellular tissues surrounding the rectum. Sometimes it goes around the bowel and comes out on the opposite side, forming a horse shoe fistula. An internal sinus, if left to nature, will sooner or later make an opening on the skin; but it may burrow into the ischio-rectal fossa a long time before it does so.

The *diagnosis* is easily made when the external or internal opening is found, but it is often difficult to find the internal opening. It will usually be found within the grasp of the internal sphincter—occasionally higher up. The sinus may extend above the internal opening, and rarely a second opening is present. If the probe, carefully passed into the sinus, fails to find the internal opening, inject some hydrogen dioxide into it; it will frequently find its way through, and can be seen foaming in the rectum. It must be remembered that a sinus opening far down the thigh may lead to the rectum. On the other hand, we should not forget that a sinus in the neighborhood of the anus may be due to caries of the tuberosity of the ischium, or coccyx, or even hip-joint disease, and have no connection with the rectum. In incomplete fistules, there is an intermittent discharge of pus from the anus, especially when pressure is made upon the circum-anal integument.

Treatment.—Injecting the fistule with stimulating solutions is usually unavailing. An operation is almost always necessary to make a cure. *Fistulæ*, resulting from stricture or malignant disease of the rectum, should not be operated upon unless the primary cause can be removed. All abscesses in this region should be opened early, curetted and treated antiseptically; this can often be done at the office, under cocaine. A very good method of treating many cases is the elastic ligature; draw it tight, and allow the patient to go about his business. The pain is quite severe for the first day or two. In three to seven days the ligature will cut through, and while it is cutting, the tract is beginning to granulate behind it, so that when it has cut through, two-thirds of the tract will be healed. The rest of it will heal after a few applications of silver nitrate, and aristol, iodoform or loletin. The ideal treatment is to incise all the structures between the two openings on a grooved director, also lay open any communicating sinuses; the fistulous tract should then be scraped out with a curette, or dissected out, washed out with a 1:3000 bichloride solution,

and the walls brought together by catgut sutures. Aristol or loretin should then be applied and the bowel confined for four or five days. In incomplete internal fistulæ, find the orifice, then pass a grooved director, from within, against the skin, make an opening here, then incise all the structures, and proceed as in the complete fistulæ. When it is impossible to clean out the fistulous tract thoroughly, they should be washed out with hydrogen dioxide, then kept packed with iodoform gauze to make them heal up from the bottom. The rectum should be washed out with an antiseptic solution after every evacuation and fresh gauze packing applied.

3. *Anal fissure* is a linear ulcer situated just within the verge of the anus. It results from a tear or excoriation in the mucous membrane of the sphincter, caused by hardened feces, syphilis, or the irritating discharges of diarrhœa or dysentery. It fails to heal because of the frequent irritation by fecal matter, and the motion and spasm of the sphincter.

The *symptoms* of anal fissure are remarkable for the severity of the pain, which is intense, notwithstanding the insignificance of the lesion. It comes on during defecation, and may last for many hours. The manner in which it is reflected may cause the patient to attribute his suffering to disease of the bladder, urethra, or other pelvic organs. The dread of the intense pain causes the patient to refrain from emptying the rectum, and constipation results. Spasm of the sphincter muscle is the cause of this agonizing pain, and is always present in true anal fissure. It is often so great that it is impossible to pass the finger into the rectum, or to make a satisfactory examination without an anæsthetic.

Treatment.—In recent cases a cure can often be effected by keeping the feces soft by laxative and enemata, washing out the rectum with carbolic acid or other antiseptic solution after each evacuation, the application of silver nitrate, and some antiseptic powder or unguent to the ulcer. When this treatment fails, as it often will in chronic cases, the next best treatment is to thoroughly paralyze the sphincter by stretching it with the thumbs. Complete anæsthesia is required for this operation. Another method, said to be more effectual than dilatation, is to make an incision through the base of the ulcer, dividing either the whole or a portion of the sphincter. Any small tab of mucous membrane or polypoid growth complicating the fissure should be removed at the time of operation.

4. *Prolapse of the rectum* may be partial when the mucous membrane only protrudes, or complete when all its coats are involved, the rectum being turned inside out. The disease is most common in children and the aged, from a weakened condition of the tissues. Anything that causes abnormal straining and bearing down—as stone in the bladder, urethral stricture, polypus, dysentery, chronic constipation, or phimosis—may be the exciting cause.

The *diagnosis* is usually very simple; the prolapsed tissues appear at

first only when at stool, but frequent repetition of the process soon weakens the sphincter so, that the prolapse occurs whenever the patient walks or assumes the erect posture. If allowed to remain out long, the tissues become so much swollen that it is difficult to reduce, and strangulation and gangrene may result.

Treatment.—The prolapsed tissues must be reduced by gentle, though firm, pressure with the fingers, using some lubricant on the parts. During the reduction, the patient should assume the knee-chest or the lateral (Sims') position. If these measures fail, cover the finger with a piece of lint and insert it into the orifice of the protuded bowel and push it in slowly and gently. After it is reduced, the finger is withdrawn, and subsequently the lint is pulled out. The rectum must be suppurated by a "T" bandage, or strips of adhesive plaster, applied so as to hold the nates close together to prevent recurrence. The bowels must be kept soft, and any trouble that is likely to produce straining must be removed. The patient should lie on the side or back or stand while evacuating the bowels. Astringent enemas, ointments and suppositories are serviceable.

Under such a line of treatment, cases occurring in children and cases of moderate severity in adults can be cured. The more serious cases require surgical treatment. With a thermo-cautery, make several longitudinal applications to the prolapsed tissues. Another method is to clamp longitudinal portions of the mucous membrane, which is then cut off, and the stump seared with a red-hot cautery iron. In chronic cases, in which the sphincter has become relaxed, the triangular portion of the sphincter, and also a portion of the posterior wall of the rectum, may be removed; sutures are then applied so as to bring the divided walls together.

Ulceration of the rectum may be dysenteric, syphilitic, tuberculous, or malignant. The exciting cause is often constipation. It is most common among the aged, and is often mistaken for dysentery. Symptoms: irregular diarrhœa, pain, tenesmus, muco-purulent, and blood-stained discharges and other symptoms of dysentery. Ulceration in the upper part of the rectum is far less painful than in the lower part, within the grasp of the sphincter.

Treatment.—Keep the excreta soft, wash out the rectum after each stool, and use mild, astringent, antiseptic and anodyne enemas and suppositories. A weak carbolic solution is very soothing and healing. An enema of laudanum in starch water will relieve the pain. Tubercular ulcers require iodoform, and syphilitic cases require the iodides and mercury, in addition to the local treatment.

TRANSLATION.

TREATMENT OF PENETRATING WOUNDS OF THE ABDOMEN.

Hôpital de la Pitié—Doctor PAUL RICLUS.

Translated for Gaillard's Medical Journal, by H. McS. GAMBLE, Ph.D., M.D.,
Moorefield, W. Va.

The ever pendant discussion upon the treatment of penetrating wounds of the abdomen, seems to have quieted down somewhat, and the periodical debate which, since 1884, has taken place before the Society of Surgery has not been resumed this year. The arguments on both sides are exhausted, and the facts, unfortunately, are not yet sufficiently pronounced to convince those holding opposing views. I will confine myself, then, to explaining the respective position, at the present time of the two camps confronting each other.

You are familiar with the stages on the route traveled over; before antiseptics, the question of intervention was not to be entertained, I mean practically, for there are always precursors and apostles to foresee, and to dare everything; but to open the abdomen was, in those times of complications of wounds, an undertaking too bold for surgeons of good sense. After the discovery of the dressings now in use, above all after the wonderful success of the greater part of the laparotomies, the idea of cutting through the abdominal walls for the purpose of exposing the perforated or torn intestines could not be long in developing itself, and we learned all at once that this had several times been attempted, especially in America, and the wonderful successes that were published, were certainly not calculated to discourage us. And in point of fact, the majority of our colleagues, I speak of the more able and more learned, accepted the idea of intervention in penetrating wounds of the abdomen as one of the conquests of contemporary surgery.

This is what was, and what is still, their argument: Every projectile or every sharp instrument that penetrates into the belly therein wounds an intestinal fold; numerous experiments have been made to determine this question, which show us that scarcely 6 or 7 times out of 100 have the stomach, the small or the large intestine escaped perforation. So it may be said, in practice, that the diagnosis of penetration of the abdominal wall carries also that of penetration of the intestine. Interventionists and abstentionists are here in accord, and it is fortunate that we have this crude means of knowing where we are, for at the commencement of the

accident, the signs are very precarious and delicate, that might reveal to us the intestinal lesions; in the great majority of cases, it may be said that they are altogether wanting. This primary fact is therefore admitted, and from penetration of the abdominal wall, one may accept perforation of the intestine.

But a perforation of the intestine would have as an inevitable result the escape of matters into the serous cavity, the inoculation of the serous membrane and the invasion of a superacute rapidly fatal peritonitis. Clinical experience would seem to corroborate this affirmation, and did not Trelat declare, upon the evidence of statistics, that 99 per cent. of the wounds of the intestine treated by expectation or the medical treatment were condemned to death. The lethality for lesions of the large intestine was a little less, but it nevertheless reached to 92 or 96 per cent. The conclusion was easy to be drawn: Since, after the discovery of antiseptics, laparotomy has become a child's play; let us open the abdomen; let us go in search of the perforated fold or folds; let us obliterate their wounds by a suture, and perhaps we will save our patients. At all events, says Goodwin: "The condition of the patient will not be sensibly aggravated by the operation, 'for,' says another clinician, 'all the gravity of wounds of the abdomen proceeds from the lesion of the viscera; laparotomy adds nothing thereto of itself.'"

I have attempted, almost alone, I must say, to stem this current. I have appealed in the first place from the somber prognosis presented by Trelat and have shown by pathological anatomy, clinical experience and experimentation, that wounds of the stomach, of the small and of the large intestine, might be cured spontaneously or under the influence of medical treatment; I have proved that certain individuals, whose viscera, have been once or several times perforated, have recovered from these perforations, necroscopic examinations made, thanks to a death that had supervened from causes independent of the abdominal traumatism, have, several times, permitted us to prove this spontaneous cure beyond the possibility of a doubt, and in a memoir published in collaboration with my former interne, M. Paul Noguès, I have been enabled to report quite a number of cases of this kind.

Hence, with the old experimenters and the old observers I called to mind the mechanism of these spontaneous cures. In certain cases, when the wounds are very small, the parallelism of their edges, at the level of the different intestinal or stomachal temics may be destroyed and, in spite of the solution of continuity of the tissues, the track is obliterated; in other cases, the mucous membrane expresses itself, so to speak, through the other coats and by forcing itself upon the serous membrane, completely closes the intestinal wound; in other cases still, the epiploon surrounds the wounded fold and conceals the abnormal opening; finally

in other cases, a neighboring angle or fold of the mesentery, or the parietal peritoneum, in a word, a serous leaf that is near by obstructs the solution of continuity, adhesions are formed and the ultimate cure may follow as a consequence. And it is this latter mechanism that we regard as the most effective and the most frequent.

And this was no imaginary matter; all these facts and all these modes of cure rest either upon experiments as old as physiology, or upon those quite recently performed by ourselves, or upon the examination of specimens which the frequent laparotomies in these latter years, have enabled us to multiply; the mucous obstruction had been denied; M. Boyer and I have shown it as existing and sufficing, that is to say, opposing itself to the passage of the contents of the intestine into the peritoneal cavity, in the case of two folds perforated, the one by a projectile and the other by a knife; the arrest of the matters by the destruction of the parallelism of the lips of the wound has likewise been observed in the course of laparotomies, and for my part I have seen, in an opening of the abdomen made thirty-six hours after a wound inflicted by a revolver two orifices that were at least already hidden by the adhesion of an adjoining fold, which had prevented an effusion of the intestinal matters. All these facts are hereafter indisputable.

We shall show that dogs have survived penetrating wounds; three out of six of the animals thus injured did not die and the autopsy showed that early adhesions with the neighboring folds of the intestine had effected a cure. M. Getor who, himself, was pursuing analogous experiments, but the truth is for the purpose of demonstrating the necessity for intervention in penetrating wounds, saw three dogs out of six survive notwithstanding the perforation of a fold of the small intestine. Finally, and this was my principal argument, a statistical account—certainly incomplete, assuredly open to criticism, but made with all the vigor demanded by cases of necessity incongruous—has been drawn up by M. Noguès and by ourselves in good faith, upon which there is no necessity of insisting. We have collected eighty-eight (88) reports of penetrating wounds of the abdomen, made by small projectiles and treated by systematic abstention; now, it gives up 66 cures to 22 deaths only—that is a mortality of 25 per cent.

This statistical report is evidently too favorable, but the following is one that can not be disputed, for it emanates from an American surgeon, Stimson, who will not be suspected by any one of abstentionistic zeal.

Stimson gives us the cases treated in the hospitals of New York twelve years before 1885, the epoch at which systematic laparotomy supplanted the practice of abstention. These cases reach to the number of 37, in which we find 20 deaths and 17 recoveries. If recovery is observed

here less frequently than in our table we might explain this difference by the fact that the author has eliminated from his report those cases in which very clearly marked signs, as pains, vomiting, meteorism and shock were not present to confirm the diagnosis of perforation. We have not pursued this plan in our reports, knowing very well that the intestine may be perforated without presenting any functional troubles, any appreciable local or general symptoms, and, in spite of the criticisms, the value of which we appreciate, we prefer our own statistics to his.

But we accept none the less such as it is, this statistical table of Stimson, and we see what has become of the old affirmation so long sustained by the Society of Surgery, that wounds of the intestine do not get well or get well only in the proportion of 1, 2, 3, 4 and 5 per cent. It is certain they are very often cured without intervention, and I believe the successful cases are much more numerous with it than with laparotomy. Here is the point of the debate, and I shall discuss it, I assure you without prejudice, very much troubled to find myself nearly alone in my opinion; I even desire to allow myself to be convinced by my colleagues, saying to myself that after all it is necessary to take into consideration the sort of unanimity which has manifested itself against my opinion. And yet new investigations do not contradict me, for, apart from a few striking and brilliant successes, how numerous are the checks following intervention! I myself have three times had recourse to laparotomy; I have performed it as rapidly as possible, as soon as I have been brought into the presence of the wounded, and three times has death followed.

In effect, laparotomy for a penetrating wound of the abdomen is grave in itself; it is no longer the simple opening of the belly, an intervention without peril, and of which the mortality is reduced almost to zero. It is a long, difficult and dangerous operation, one that consists in exploring the intestine in order to discover the injuries therein, and to obliterate them if they exist. It is long since the tables that we have drawn up prove that it may last from two to three hours, and that the average is an hour and three-quarters; so it is not a matter of indifference to manipulate the intestine during such a length of time; it is necessary, so to speak, to examine the folds centimetre by centimetre in all their aspects and upon all their borders, for the perforations are often not gaping and are concealed behind the stomach, the deep regions of the duodenum, under the mesentery, at the bottom of a fold, and during these examinations, the bowel inspected, ruled off, manipulated outside of the serous cavity is subjected to numerous chances of infection. Septic inoculation is very likely to be produced, and the most careful laparotomists tell us of peritonites that have supervened after these long interventions. It is also very difficult, and we really do not know what Kolloch means when he says that in order to obliterate two perforations of the large intestine and one of the small

intestine, he has successfully performed a laparotomy "without medical aid and without any of the accessories regarded as so important in hospital practice." The surgeon who would, upon such an assurance, open an abdomen, would expose himself to cruel mistakes, and if the accessories regarded as so important" signify the thousand details of antisepsis, the peritonitis would prove by its appearance their absolute necessity to whoever might neglect them upon the faith of Kolloch. One closes a first, a second, a fifth perforation, but there is often an eighth, a fifteenth, a twentieth, a twenty-eighth, as happened in a celebrated case. And I affirm that an operation is difficult when such able and careful surgeons as Peyrot, Périer, Nélaton and Berger have closed the abdomen whilst leaving an unobliterated perforation; when Jordan Lloyd overlooked a wound of the mesentery and a contusion of the bladder; when Annandale used a suture that allowed the intestinal matters to filtrate through it; when Jersey saw gangrene produced by the constriction of his threads; when Pozzi constricted the cavity of the bowel by two-thirds, substituting thus for the rent an obstacle which, if the subject had survived, would have exchanged death by obstruction for death by peritonitis; when Briddon obliterated a wound of the stomach, but left four openings in the jejunum.

It is finally very dangerous, as witness statistics. Dr. Coley has furnished us with a summary as complete as possible of the laparotomies that have been performed. The first comprises the cases in which the opening of the abdomen was made within the first twelve hours after the accident; there are 40 cases, with 22 deaths and 18 cures, about a mortality of 55 per cent.; the second contains those cases in which there was no interference until after twelve hours; these attain to the number of 22, with 17 deaths and 5 cures: that is a mortality of more than 77 per cent.; finally, the third embraces those cases in which the length of time between the reception of the injury and the operation has not been reported; these amount to 12, with 7 deaths and 5 cures, a mortality of 58 per cent. Upon comparing the three tables, we find the average of mortality to be 60 per cent. In a table that I have made with Noguès, and which contains 102 cases, we find 37 cures and 65 deaths, which is a mortality of nearly 63 per cent. Norton reports 110 cases, with a mortality of more than 67 per cent. Finally, a later statistical report of Coley's, which relates to 165 cases, gives the same average mortality, that is to say, 67.2 per cent., so that far from being more favorable, as is continually affirmed, laparotomy has not made any advances for the better.

I know what may be said of these statistics en bloc and of the incongruous cases which they contain; but the frightful mortality that follows laparotomy is none the less to be demonstrated by them. Certainly, my opponents do not despise these statistics, and Galaguiet, who considers

them with the greatest care in his excellent article, opposes us with the statement that "No one of the wounded so far subjected to laparotomy in France would have recovered spontaneously. If then, they had been abandoned to themselves, and if their cases had been published, one would have been forced to inscribe them upon the necrological table of those cases treated by abstention." This objection does not appear to me tenable; in the first place because we do not know absolutely which are the cases that recover spontaneously and which are those that death is to terminate; the extreme gravity of the lesions determined by laparotomy is not a sufficient criterion, for has not an individual been seen to survive a double perforation by a chassepot bullet? Then my statistics are entirely made up from French cases and at a period when laparotomy had not attained to the number of ten. I might, therefore, have placed them in any collections without making much change in their favorable proportion. Finally, our friend forgets the reports of Stimson bearing upon the cases that precede the prophetic date of 1885, a period in which one always abstained from action. The reproach of M. Galaguer could not, therefore, affect these statistics.

M. Chaput objects to the general doctrine of abstention, in the first place that I ought to state, in regard to the observations of spontaneous cures which I have collected, the entire number of deaths that supervened after abstention. But this is what I have tried to do; I have inscribed upon my table all, absolutely all, the cases that I have found in the hospital services, in special memoirs and in all the collections. I have placed the deaths on one side, the cures on the other. What more could I do? M. Chaput says that the figures of Stimson prove nothing in favor of expectation, since with abstention and intervention the mortality is nearly the same in both instances. I will remark in the first place that 10 to 15 per cent. in favor of abstention does not appear to me to be despised, and that no serious statistics in which laparotomy is mentioned, have given 44 per cent. of successful cases. And I will be permitted to recall the fact moreover that Stimson has suppressed from his statistics a number of cases in which the intestine was, perhaps—I will say without doubt—perforated, but which he has discarded because there was no very distinct sign to prove perforation. So, I repeat to you, that the clinic demonstrates that the intestine may be opened without provoking appreciable local or general symptoms.

M. Chaput objects, finally, that "every time that laparotomy has failed it is because it was done too late, or because operative mistakes were committed, such as oversight of a perforation, a bad suture, or a suture causing a marked narrowness. Inversely, when laparotomy is done early—within four hours—and with a good technique, it will yield con-

stant cures, if the lesions have not been too considerable." How is M. Chaput to be answered. He knows as well as we that in the immense majority of cases laparotomy cannot be performed within the first four hours after the accident. Our customs do not admit of this immediate call of the surgeon; the wounded person is carried into a pharmacy or to his own home; one goes for a physician, who will himself have to have an operator called in, and the tenth or the fifteenth hour is passed before any intervention can be attempted. Let any one read over the reports and he will see that such is the history of nine-tenths of our wounded. To operate in the first four hours, is at the very first to demand the impossible and to do away with laparotomy in nearly three-fourths of the cases.

And then will you intervene in all sorts of surroundings, and the opening of the abdomen, that peculiarly delicate laparotomy, shall, I say, with the details and the infinite precautions which the exploration of the intestine demands, have you the pretention to perform it elsewhere than in a hospital or in asylums? No, if you do not wish to anticipate a certain catastrophe, and you see already that military surgery cannot take advantage of your precocious laparotomy. Remember what Delonne said about it in the Congress of French Surgeons, and which he repeats in his remarkable and learned treatise. In all the small cities and in the country intervention will be totally impossible, and, in short, over the whole land, you will decide to limit this intervention to the large hospitals of our large cities. And, in order to assure our success, to say nothing of the "lesions too considerable," who will caution us against the operative mistakes so frequent in the most able and the most careful hands? Have we not shown the best surgeons of France and of foreign countries, overlooking several perforations, narrowing beyond measure the caliber of the intestine or making imperfect sutures?

It is then possible that, under the conditions which M. Chaput demands "the cures are constant." But these conditions, and I have in view here, above all, the first four hours of the injury, are the more generally impracticable. We find the question presented in the following terms: When the patient is brought to you the psychological hour has passed, the operation presents itself under the deplorable conditions that make up our present statistics, and the argument of M. Chaput falls of itself. The problem has not advanced a step and we return to our point of departure and to our discussion, the last term of which, in fine, is that at this hour and under the special conditions of ancient date of the accident, and of insufficient arrangements for surgical operations, systematic abstention seems to me to yield greater success than our unhappily precarious interventions.

But, suppose that we should arrive in the first hour, in a location in

which intervention is propitious, what will be our rule? Is it necessary or is it not necessary to intervene? Thus presented, the question is infinitely delicate; it is certain that the intestines during the process of digestion are filled with matters; if the orifices are numerous and gaping and if inoculation of the serous membrane should take place, primary laparotomy before the development of peritonitis and meteorism of the abdomen will be much easier and will be capable of yielding results which it would be useless to expect later, when the general phenomena shall have become an almost insurmountable obstacle to the manœuvres of the surgeon. But in general, nothing reveals at the first moment the gravity of the lesions; one knows at most that the wounded person is or is not in a state of fast, but nothing will indicate to you whether the perforations are multiple nor whether they are or are not obliterated by the mucous pley, by precocious adhesion of the epiploon or of a neighboring intestinal fold.

And then what is to be done? Must we wait for the peritoneal reaction, which will indicate the inoculation of the serous membrane? But will it not then be too late? The interventionists answer us: "Laparotomize, laparotonize always. If there is no intestinal perforation the operation is harmless, and, in fact, in the immense majority of cases the belly is reclosed without accident and without great danger in surroundings provided the surgeon be aseptic. If, on the contrary, perforations exist, you will obliterate them and you will have some chances of saving a wounded man, who, without your intervention, would die." This is the reasoning, for my part, I do not accept it in its entirety. I believe that there are some cases in which the perforations are closed better, and at less cost, by nature than by the surgeon; I believe, as happened to me one time, that one may destroy adhesions which would have been sufficient, while in order to close the abnormal openings it is necessary for you, you surgeons, to do a long operation and one that may kill your patient. Has it not been related to us how one of our ablest colleagues recently opened an abdomen on account of perforations made by the ball of a revolver; he found and closed one orifice, then two, then three, then four; but the general state of the patient became so disquieting that, in order not to see him remain in his hands, he closed the abdomen notwithstanding the openings that still remained to be obliterated.

Are you going to conclude from this long pleading that I am an abstentionist in all cases? No, and I have tried to formulate the clinical conditions which appear to me to demand intervention, that intervention so uncertain in its result, but which, finally, seems to me the less precarious than abstention. I advise laparotomy when indications, which I need not mention here, induce me to believe in the existence of a hæmorrhage; a vessel is open, it must be closed; this is a general rule in surgery.

I advise it also when the immediate escape of gas and of intestinal matters through the wound reveals to us a large wound that is going to inoculate the peritoneum; I would intervene also when a localized tympanitis, which is recognized the more frequently by the peculiar sonorousness of the hepatic region, proves to me the existence of a perforation which, while capable of allowing the gases to diffuse themselves, might also provide a passage for the solid or fluid matters. Again I would intervene when the peritoneal reaction commences, which proves the inoculation of the serous membrane. But it is then very late, and I confess that I do not greatly insist upon it, for if the interventionists supply us with memorable cases in which laparotomy has appeared to save the wounded, the abstentionists also show us a peritonitis turning short and the patient surviving without an operation.

But, according to these rules, intervention is so often legitimized that it would be doubtless more simple to say when I, who am classed among the most ardent abstentionists, oppose the opening of the abdomen. Eh! Mon Dieu! I have come to the conclusion that, in spite of my long plea, my views are practically almost identical with those of the interventionists, and I subscribe to what one of them says—Galaguiet—who, also, abstains like myself, when he sees a wounded man in the state of fast and who has just been struck, it may be by a projectile of small caliber or it may be by a pointed, narrow and sharp instrument, and if, after an attentive examination, he discovers no local or general symptoms. Perhaps my formula would be shorter and more comprehensive and I could readily say: "I abstain when, in a penetrating wound of the abdomen, no general symptom, no local sign appears to force me to act."

You see the immense concessions that I have always made and that I am making more and more to intervention, and I hope that I shall not stop there. Already are our hospital appointments such that we can intervene without fear of being hurtful to the wounded through some septic inoculation derived from ourselves or from our instruments; but this is not enough, and we hope that the technique of intestinal sutures, which has already made such progress, and that a still more perfect instrumentation will permit us to obliterate more quickly and more thoroughly the abnormal openings. Then, to attain the ideal which M. Chaput promises us, the almost uniform cure, it will remain only that we be called within the first four hours to the side of our patients transported into propitious surroundings. But, while waiting for that day to arrive, abstention appears to me sometimes preferable to indiscriminate intervention condemned by the greater part of our colleagues.

SELECTIONS.

APPENDICITIS, AS IT AFFECTS LIFE INSURANCE RISKS.

By ALBERT WOOD, M.D.,

Medical Director of the State Mutual Life Assurance Company, Worcester, Mass.,
Before the Association of Life Insurance Medical Directors, at
Richmond, Va., April 30, 1896.

No disease has assumed more importance in recent years, or excited greater interest in the medical profession, both at home and abroad, than appendicitis. It has been studied by the ablest physicians and surgeons in this country and in Europe, and their contributions have followed each other in rapid succession, so that now its literature has become voluminous.

From such abundant material one would think that necessary data could be easily collected to show the relation which this disease bears to life insurance; but I have studied many of the scholarly articles on this subject published within the last ten years and have failed to find just the information needed to enable me to form an intelligent conclusion.

Wells published in the Medical Examiner for November, 1894, a valuable paper on "Appendicitis and Insurance," which contained many important facts, a knowledge of which is necessary to appreciate fully the bearing of this disease on insurance.

Besides this contribution there are in medical journals only one or two short items in which any illusion had been made to this disorder from an insurance standpoint.

To obtain exact information I addressed a letter of inquiry to various companies to learn the practice of each in dealing with an application of a person giving a history of appendicitis. The replies showed such a remarkable difference in the methods of the several companies in dealing with this class of applicants that I was strongly impressed with the importance of bringing this subject before the Association for discussion, and with the necessity of trying to formulate some uniform rule for the guidance of insurance companies.

In this circular letter there were six questions. The first was: How long after an applicant has recovered from a mild or catarrhal attack of appendicitis before you consider him eligible for insurance?

Three companies replied: "We decline all, unless the appendix has been removed." Another company answered: "Ten years." Another said: "Six months." The other companies variously fixed the limit between these two extremes. No two companies, excepting those which declined all, gave the same answers to the six questions submitted.

Many persons who have had appendicitis are now seeking life insurance, and no doubt the number will be much larger in the near future.

The question of the eligibility of this class of applicants is one which is comparatively new, and its definite solution may not be possible at the present time. It may be necessary to wait until a larger clinical experience furnishes more accurate knowledge of the natural course and the ultimate outcome of the disease, or until the differences of opinion among physicians and surgeons upon some of the points in its pathology, prognosis and treatment have become settled. Even with the knowledge now at the command of the profession, underwriters ought to agree upon some uniform mode of action which will do neither injustice to the applicants nor companies. I have not attempted to collect from the several companies the number of deaths of policy holders where appendicitis was assigned as a cause, and who had a history of having had the disease at the time of being insured, for I thought that even the combined experience of all the companies would be so limited that it would not be of much value for the purpose of this study.

I have seen no statistics showing the frequency with which inflammation of the appendix occurs. That it is quite common is well known. The statement, often seen, that at least one-third of all post-mortems made upon adults at random give evidence of old inflammatory lesions of this organ, indicates as clearly as anything the frequency of this ailment. Some of the expressions used by those surgeons who have so forcibly advocated early operations in all cases would lead one to infer that they believed that this disease was unusually frequent at the present time. It is generally thought, however, that more cases of appendicitis are seen nowadays than formerly, simply because the profession has learned to recognize its true nature.

It appears oftener in men than in women, four to one, according to Fitz's first series of cases, but in his second series two to one. The Munich statistics, however, show relatively more women than men affected.

There are no observations which indicate the exact mortality of this affection. Fitz says: "The rate of mortality is by no means clearly established. The physician who sees only mild cases says it is low, while the surgeon who is called upon for aid in the gravest cases considers the mortality very high." Bridges says: "The mortality from appendicitis, considering the frequency of it, cannot be regarded as great. The mortality of those cases eventuating in perforation of the appendix is, however, great." Richardson, of Boston, writes: "Excluding certain zymotic diseases it causes more deaths than any other abdominal lesion. The number of deaths from appendicitis, in which the true cause is not even suspected, is, I have no doubt, very large. If we take the returns, however, and select those cases whose death has been caused in males under forty

by 'inflammation of the bowels,' we should get an approximate estimate of the number of deaths from this disease. It is only by collecting a large number of cases from many observers that the true death rate can be determined. This I have not attempted to do."

Let us look now at a few statistics. In his second series of cases Fitz gave the number which died as 26 per cent. Porter, of Fort Wayne, collected 448 cases, in which the death rate was 17.23 per cent. Sahli reports 7,213 cases treated by 446 Swiss doctors, only 476 of which were operated upon. Of those not dealt with by operation only 8.8 per cent. died. Richardson gave me his experience in 401 cases, with a death rate of 13.4 per cent. Hawkins states the death rate of 264 cases admitted into the St. Thomas Hospital, London, as 14 per cent. Ferguson says: "I see on an average about twenty cases of well-defined appendicitis each year, and out of this number about four would come to an operation. All the patients would get well, and the vast majority would remain well." Bryant says: "Undoubtedly from 60 per cent. to 80 per cent. of the cases would recover from primary attacks without operation." White writes: "Perhaps 80 per cent. of the cases of this type (catarrhal) recover under medical treatment. Of the remaining 20 per cent. at least one-half can be saved by operation during the condition of localized abscess, which occurs in probably that proportion of cases; of the remaining 10 per cent., in which no protective adhesions would form, a certain indeterminate proportion recover after operation, before septic peritonitis and intestinal paresis had occurred. This would leave a death rate of say 5 per cent. to 8 per cent." (Wells.)

If we examine the recent reports of those surgeons who believe that this disease should always be treated as a surgical one, and who have so vigorously pleaded for an operation in all cases as soon as a positive diagnosis has been made, it will be found that the death rate has been remarkably reduced.

Deaver states that he has made 200 consecutive operations without any death, and Morris has recently published the results of 100 consecutive operations with only two deaths. These included all forms of the complaint. The reports of other surgeons show equally good results. Wyeth writes to me: "I have seen very few cases of death from relapsing appendicitis. I think this is accounted for by reason of the adhesions which form and include the first inflammatory focus, mechanically retarding the rapid infection of a recurring inflammation. I believe if every case of appendicitis were operated upon by a competent surgeon within twelve hours of the first symptoms of well marked emigration of infectious organisms through the diseased or perforated wall, the death rate would not be over 1 per cent." Richardson, who does not advocate operations in all cases, said to me that he had seventy-five consecutive opera-

tions with no fatal results. Even general peritonitis, which is so much apprehended and dreaded as a result of an inflammation of the appendix, and which has been considered until quite recently to be almost surely fatal, has lost its terrors in a measure, so that now a large per centum of these cases recover. McBurney has given us the records of his operations for diffuse suppurative peritonitis occurring as a result of appendicitis. Out of twenty-four cases fourteen recovered. Albee saved three out of seven similar cases. Hawkins gives nine recoveries in thirty-six cases, some without operations. Richardson reports nine recoveries in thirty-two cases. When we review the rapid progress made by the American surgeons in the treatment of this malady in the last few years, with its brilliant results in the saving of life, it is not unreasonable to anticipate that in the near future, with this improvement in the treatment still continuing, its death rate will become quite low.

I have dwelt upon this question of mortality, because it is important that there should be a proper appreciation of the dangers to life resulting from appendicitis. Especially is this true where the remarkable tendency of this disease to return is considered, and the possibility that the subsequent attacks may be followed by the same fatality as the primary one.

In studying this disease, as affecting life insurance, only non-suppurative and suppurative appendicitis need be considered.

NON-SUPPURATIVE APPENDICITIS.

It has been stated by some observers that about 80 per cent. of all cases seen are of this form. The percentage of recoveries after the first attacks is variously given. Death is rare, and it occurs only when general peritonitis or some other serious complication supervenes. The pathological changes in the appendix may be of the slightest, or they may be such as to leave the organ permanently diseased, or its lumen may become partially or completely obliterated and the organ converted into a fibrous cord. It may be the seat of tuberculosis or other morbid conditions. Adhesions may be formed of various extent and importance, and which have been found to be the cause of some of the remote after effects of the disease. There may be only one, or one or more subsequent attacks may occur at short or long intervals. Complete and permanent recovery may follow the primary or any of the succeeding attacks, or it may not take place until the appendix is removed. Septic general peritonitis or other serious complication may appear.

It is believed by many eminent surgeons that the appendix once severely or mildly inflamed is ever after a diseased structure, which is apt to give rise to serious trouble at any time in the future, and that it is a risk to the life of the patient to leave such an infected organ within the abdominal cavity. Many equally prominent in the profession have not accepted these extreme views.

It is in this variety that most of the relapses and recurrences are seen.

Fowler states so clearly the distinction which should have been made between the chronic relapsing and the recurring forms that his words are quoted fully. He writes of the former: "The patient may become seemingly convalescent, in that all pain and febrile symptoms disappear; He may even be permitted to resume his avocation. Within a few weeks, or even earlier, a relapse takes place, with the symptoms perhaps more violent and threatening than at first. There is one symptom at least which does not entirely disappear and its presence always places his attendant upon his guard against this form of the affection. I allude to the symptom of *persistent tenderness*. This is sometimes accompanied by the presence of a tumor, although the latter is not an essential symptom of this type of the disease."

He says of recurring peritonitis: "The special feature of this form is the fact that the attacks occur at long or short intervals, suggesting some predisposing cause, which continues active after recovery from the first attack. It differs from the relapsing form of the disease in that entire recovery takes place. The patient remains free from any trace of the affection for varying periods, when suddenly, and without warning, he is subjected to another attack."

In some cases the intervals between each succeeding attack becomes longer, its severity decreases, and finally the disorder ceases altogether, so that the patient is restored to health and is ever after as free from the risk of future trouble as if the appendix had been extirpated. This occurs when the lumen of the appendix has become completely obliterated.

In those cases of *appendicitis obliterans* reported by Senn, where ablation of the appendix showed only partial obliteration of the lumen, the relapses were frequent, and there was local discomfort and tenderness remaining during the intervals, as in the chronic relapsing form described by Fowler.

The two features of this type of appendicitis which make it of peculiar interest to life insurance companies are its tendency to recur and its possibility of passing suddenly into the severe forms of the disease, either at the first or any subsequent attack.

LIABILITY TO SECOND ATTACKS.

The statistics showing the liability to second attacks are far from being satisfactory. The following figures will show the percentages of relapses and recurrences, as given by a few observers: Fitz, in his first series of cases stated it as 11 per cent., in his second series 4 per cent., and in a recent conversation which I had with him he said: "A relapse is as likely to occur as not." Irish gave 50 per cent., Richardson 49.4 per cent., Price 50 per cent., Ransohoff 13 per cent., Kraussold 23 per cent., Krafft 22 per cent., Porter 9.5 per cent., Bryant, 11 to 17 per cent., Sahli

20 per cent., Gage 33 1-3 per cent. Gage writes: "Almost 33 1-3 per cent. of my cases had previous attacks. This is by no means equivalent to saying that 33 1-3 per cent. of all cases will have relapses, and I do not think this last proposition is a fair one." Mynter writes: "I firmly believe that a patient who has had one moderately severe attack is bound to get another sooner or later." Morton writes: "A careful inquiry will usually demonstrate one or more relapses." Meyer says: "It is the duty of the physician to follow up these cases, to determine how many remain actually well after one attack. I do not believe 20 per cent.—no, not more than 10 per cent.—would be found to remain healthy." Wyeth writes: "From clinical experience it is known that a considerable number of cases of appendicitis, with more or less peritonitis and exudation, and at times with suppuration, undergo spontaneous resolution, the patient being usually restored to health and living indefinitely without recurrence of the disease. It may be safe to say that 20 per cent. of all cases have such a fortunate end."

TIME OF SECOND ATTACKS.

I thought that if I could collect a large number of cases, showing the exact time at which the second attack occurred, I would then be able to determine the time within which a majority of second attacks appeared. The published reports of cases do not give the exact time of the second attacks only in a few instances. Probably there is stored up in the note book of the many observers just this information, and if it were only accessible it could be utilized in clearing up some of the doubtful points in this investigation. Accordingly I wrote to several physicians and surgeons asking for such data. From their replies and from those published cases which I have had time to examine I have been able to collect 326 cases where the approximately exact time of the second attack was stated.

The following is a summary of these cases :

In 210 cases it appeared before 6 months,					
" 60	"	"	between	6 months and 1 year.	
" 14	"	"	"	1 year and 18 months.	
" 13	"	"	"	18 months and 2 years.	
" 11	"	"	"	2 years and 3 years.	
" 3	"	"	"	3 "	4 "
" 2	"	"	"	4 "	5 "
" 13	"	"	after	5 "	

From these figures 64 per cent. of the second attacks occurred before six months, 82.8 before one year, 87.1 per cent. before eighteen months, 91.1 per cent. before two years, 94.4 per cent. before three years, 94.9 per cent. before four years, 96.5 per cent. before five years, and 3.3 per cent. after five years.

These statistics, so far as known, are the only ones of the kind collected up to date, and they must be accepted as establishing the time within which second attacks have appeared. The study of a larger number of cases no doubt would alter these percentages somewhat, but still the fact would probably remain that in a large majority of the cases the relapses take place, if they are going to occur at all, within two years after the primary lesion. The same opinion is expressed by those surgeons who replied to my question without giving me the exact data, as, for instance, Cabot writes: "In regard to your second question, I should say, usually, if a patient relapsed he did so within a year, although I do not feel that I could lay down a positive rule in regard to this. In cases which have gone over two or three years I should say I have almost never seen a relapse. My experience covers several hundred cases." Morton writes: "From thirty days to a year or more." Mixter says: "Within two years." Gage says: "In my experience a large majority has occurred within two years, if at all, and mostly within one year."

SUPPURATIVE APPENDICITIS.

It is in this variety that nearly all of the grave cases are seen, and they are usually the result of perforation of the appendix. Should this perforation take place before protective adhesions are formed, then general septic peritonitis is rapidly excited, with fatal consequences, as a rule; or there may be profuse peritonitis without perforation.

It is this large death rate from peritonitis which makes this form of the disease so much dreaded, though with prompt surgical interference more cases recover now than in times past.

When protective adhesions are formed before perforation occurs then there is the formation of a localized abscess, the result of which, if relieved by skillful surgical aid, is almost always favorable. If the abscess is allowed to rupture itself, the course of the pus may be externally, or into some internal viscus, or into the peritoneum, causing diffuse peritonitis. In those cases where the appendical abscess forms behind the cæcum (extra-peritoneal), the pus may pass in various directions. The most favorable place for the abscess to discharge is into the bowel, and next into the bladder. When into the former nearly all recover, and when into the latter 50 per cent. recover. In a large percentage of the cases the appendix is so changed in character by the attack, or is imbedded and bound down in the adhesions, that no further harm can result to the patient. Again, the appendix may slough entirely away, and consequently the patient will be as exempt from a subsequent attack as if the organ had been excised.

In the circular letter sent to the physicians and surgeons four questions were asked under the following heads :

In the suppurative cases, where the abscess was opened and drained without the removal of the appendix. (a) What has been the percentage of relapses in your cases? (b) Within what time did the second attack appear? (c) Have you seen more than one relapse in any one case? (d) Is the subsequent attack as liable to be followed by so serious results as the primary one?

Following are some of the answers received:

Answer to (a): "Some have chronic infection, not assuming forms of attacks; others have acute exacerbations."—Morris. "None."—Mynter. "One in about twenty-seven."—McGuire. "None, as far as I know."—Homans. "I can recall two in seventy-five cases."—Gay. "In no case."—Morton. "Out of seventy-nine cases four had return of the disease."—Richardson. "I have operated on at least two cases in which previous suppuration had occurred and had had an operation."—Stimson. "None."—Irish. "I cannot give the exact number, but I should say several."—Mixer. "I have had one case."—Gage. "None."—Porter. "I have seen several relapses."—Cabot.

Answer to (b): "Two weeks after the operation, one six weeks after, and one had four attacks in nine years."—Richardson. "Within a short time."—Porter. "Within six months."—McGuire. "Within a year."—Mixer. "Five years after the first operation."—Gage. "I cannot say within what time the second attacks appeared, but usually I should say within a few months."—Cabot. "Two years, both cases."—Gay.

Answer to (c): "Yes, several."—Morris. "No."—McGuire, Homans, Gay, Porter, Mixer, Gage. "Yes, one had two relapses."—Stimson. "I have seen several relapses, in one case certainly three."—Cabot.

Answer to (d): "I think so. It was certainly so in the two cases seen."—Stimson. "I should say that subsequent attacks usually appear as abscesses at a point along the old line of operation, and are, therefore, not so serious as in the first attacks."—Cabot. "I should think so."—McGuire. "No."—Porter. "No general peritonitis not likely to appear, because pus will travel along the old channels."—Gage. "Yes, no difference."—Morris. "No."—Mixer and Gay; and Richardson in a recent conversation with me said: "No, the most dangerous form is when the appendix hangs freely in the peritoneal cavity. In the abscess cases, as a rule, the appendix is bound down by adhesions, so that general peritonitis is not so likely to occur, and death following second attack is rare."

It will be seen from the above answers that while several relapses have been observed they cannot be said to be very frequent; that while two were stated to have appeared over five years after the initial attacks, all the others were within two years, and most of them within two months; and that, in the opinion of some of the surgeons, the subsequent attacks are as likely to be followed by some serious consequences as in the primary

one; but that others have expressed the belief that there is not this danger to be expected, and have very clearly given their reasons for this opinion.

In a recent discussion before the New York Surgical Society Stimson said: "The generally accepted idea is that after one attack of suppurative appendicitis sufficient changes were set up in the neighborhood to render the patient exempt from the risk of further attacks." Two cases had occurred to him recently, however, that indicated that this was not necessarily the case, since one patient, after what had been undoubtedly two attacks of suppurative inflammation, presented himself for the cure of a resulting hernia, and on operation it was found that the appendix was free within the peritoneal cavity, and practically devoid of adhesions.

Bryant and Fowler fully corroborate Stimson's statement, that frequently after an attack of suppurative appendicitis the appendix was as fully capable of originating another attack as formerly. Rushmore was of the opinion that such cases did occasionally occur.

I have quoted this discussion in full because it gives quite clearly the two opposite views held by the profession upon this point at the present time.

To my question, "Have you seen a recurrence in any form after the appendix has been excised?" one answer was received in the affirmative. Morris writes: "Yes, where more than one inch of the appendix is left in." A few cases have been reported of second attacks after the appendix had been removed, usually the result of improper treatment of the stump.

REMOTE COMPLICATIONS AND AFTER EFFECTS.

A patient may have entirely recovered, to all appearances, from the immediate effects and complications of the disorder; still he is in danger of having certain other sequelæ develop at any time in the future. The remote after effects which are most frequently seen are obstruction of the bowels in its various forms from adhesions and tuberculosis. Other sequelæ have been observed.

It is generally thought that adhesions once formed are permanent; but several operators have shown that when a second laparotomy has been required, as for the cure of ventral hernia, the adhesions have been found in many instances to have disappeared.

If no symptoms of obstruction have appeared within a certain period after recovery, can we assume with any reasonable certainty that the probability of these symptoms developing at all is quite small? If so, at what time after recovery would you fix this limit?

To these questions I received the following replies: "I do not think you can ever rule out, with any certainty, the possibility of obstruction occurring a long time after an attack, as it is impossible to tell what bands have formed. It has been my experience, however, that adhesions usually dis-

appear after the cause of irritation has been removed, so that if a patient made a complete recovery I should not expect any further trouble from adhesions after they had been a year in reasonable comfort."—Cabot. "Yes; perhaps one and a half years."—Homans. "Yes; I should think one year a liberal limit."—Gage. "I have not seen a case of obstruction after recovery from operation."—Irish. "Quite safe at four or six months."—Martin. "Yes; I believe there is very little probability of its developing."—Mynter. "Not without operation to determine the form of the adhesions."—Morris. "Yes; I think thirty days a safe limit."—Porter. "Quite small after six months."—McGuire. "In cases operated on, with removal of the appendix, the chances of future trouble are very slight."—Stimson. "Yes; two years."—Mixer. "Yes, six months."—Gay. "Yes; six months."—Richardson.

The question: Would obstruction of the bowels be more likely to occur after a general than after a local peritonitis? was answered by a large majority of the surgeons in the negative.

It will be seen, in the judgment of close observers, that the probability of the obstruction of the bowels occurring after two years is very slight. The danger of hernia following an operation in abscess cases is great, but in non-suppurative cases, where drainage is not required, this danger is quite small. A few cases of strangulation in this kind of hernia have been reported, though the possibility of such an occurrence is not large. The rupture can be entirely cured by a second operation, as a rule.

Time will not permit me to consider tuberculosis of the appendix, or of the peritoneum following this ailment, nor will I mention the other remote complications which may develop.

Of other forms of abdominal disease, which have been mistaken for appendicitis, it is not necessary now to speak. It is enough to recall the long list of morbid conditions given by Dennis, in which a wrong diagnosis was made.

APPLICATION TO LIFE INSURANCE.

An applicant who has had appendicitis is an impaired risk, but with such a history is not absolutely ineligible for insurance.

Under what conditions is he insurable?

He should have completely recovered from the disease; in all other respects he should be up to the standard of physique and health usually required; and a sufficient time should have elapsed after the attack to show that a probability of the return of the trouble, or the development of any of the remote after effects are reasonably minimized.

To determine whether he has fully recovered from the ailment, companies must rely wholly upon the opinion of their local medical examiner; and much will depend upon the care and thoroughness with which he makes the examination. He should obtain a full history of the case, the

date of the attack, the form of the disease, its severity and its treatment; whether there were any complications at the time; whether there were any previous attacks or any symptoms which might be construed as such. He should inquire as to any symptoms of indigestion, pain or constipation. He should scrutinize the abdomen with care for any evidence of tenderness remaining, a dilatation of the cæcum, of a hernia, of a fistula, or of tuberculosis. When practicable, he should employ the method recommended by Edebohls for the examination of the appendix. If the applicant is a female, then, in addition to the above, the condition of the uterus and its appendages should be carefully noted.

When possible, so much of his statement as relates to the history and treatment of the case should be corroborated by the attending physician or surgeon.

Many medical examiners have a proper appreciation of the importance of an attack of appendicitis from an insurance point of view, and obtain all of the above facts and report them to the home office; but there are some of the examiners who merely make the statement that the applicant has had the ailment, without any further information.

It would seem advisable, therefore, in all cases of this class of risks, that a special letter of inquiry should be sent to the local examiner, requesting such details as may be desired.

How long after a person has recovered from an attack of appendicitis before he should be considered eligible for insurance?

A different answer can be given to this question at the present time from that which could have been made ten or even five years ago, for the profession has a more accurate knowledge of the natural history and prospective consequences of the disorder and its proper method of treatment is better understood, and, therefore, is more successful; so that the general results to the companies will undoubtedly be much more favorable now than formerly.

The following classification will probably include all of the different phases of this disease which we shall be called upon to decide as affecting life insurance risks:

I. Cases of Primary Attacks of Non-Suppurative Appendicitis, Where the Appendix Has Been Removed.—In this class of cases the dangers to be guarded against are the return of the disease, with its possibilities, and the development of some of its remote after-effects. The statistics show that the second attack occurred before one year in 82 per cent. of the cases, before two years in 91.1 per cent., before three years in 94.4 per cent., before four years in 94.9 per cent., before five years in 96.5 per cent., and after five years in 3.3 per cent.

Those surgeons who could not report their cases showing the exact time at which the second attack took place, but did give their impressions

from the study of the several hundred cases, used expressions on this point as follows: "We should say usually, if the patient relapsed, he did so within a year. In cases which have gone over two or three years we should say we have almost never seen a relapse." They also expressed the opinion that if a patient went one year without any of the remote after-effects of the disease developing, the probability is quite small that they will appear later.

Now, if the second attack takes place within two years in 91.1 per cent. of all the cases, there is less than one out of ten chances that the disease will return after two years.

I have not been able to collect any reliable data showing the death rate in those cases which relapsed after two years. It certainly must be quite low. This statement is confirmed by several surgeons. It would seem reasonably safe to accept such applicants after two years.

II. Primary Non-Suppurative Cases, With the Appendix Excised.—In this class, the recurrence of the disease is not to be expected, but the other remote after-effects are to be apprehended. It has been shown that the adhesions disappear in many instances after ablation of the appendix. Consequently obstruction would not be so likely to occur as in the first class. Cases of this kind should be insurable after one year.

III. Suppurative Cases, in Which the Appendix Has Been Extirpated or When It Can Be Clearly Proven that It Has Sloughed Entirely Away.—It may be very difficult to decide the latter point absolutely in some of the cases. The remote consequences from adhesion to be anticipated in this variety would be the same as those in Class II., and I can see no reason why the same rule should not be adopted for both cases.

IV. Suppurative Cases Where the Abscess Was Opened and Drained, the Appendix Not Removed.—From data obtained, it appears in this type of the disease that a recurrence was observed in less than one out of twenty cases; and with only two exceptions the second attack occurred within two years, and mostly within a few months after the previous one.

While all the authorities state that there is a possibility that any subsequent attack may be followed by serious consequences, still, several surgeons who have had large experience with appendicitis inform me that, as a matter of fact, death is very rare after these relapses.

It would seem, therefore, that the risk of a fatal issue in any case after two years should be slight. Cases of this kind might be accepted, for instances, after two years.

In those cases where the abscess ruptures internally each one must be judged upon its merits. Many of these cases make a perfect and permanent recovery and are justly entitled to insurance.

V. Chronic Relapsing and Recurring Cases.—An applicant with a history of chronic relapsing appendicitis would be debarred from insurance,

because he does not make a full recovery between the attacks. When it can be decided that in all probability the appendix has become obliterated, then he should be insurable. He should be required to wait three years after the last attack before he should be considered eligible.

I find it very difficult to arrive at any just conclusion in regard to those cases in which the recurrence has been at irregular intervals, the patient having been in perfect health and free from any symptoms of the disease between the attacks. It has been stated that the patient appears to have some predisposition to the disease, and that the attacks are excited by errors in diet, over-exertion, etc., or there is an underlying rheumatic or gouty tendency, as where the ailment has occurred in more than one member of the same family.

This type, as a rule, is not liable to pass suddenly into the grave forms of the disorder. If a person gives a history of two or more attacks at periods of less than five years apart he should be declined; but when he has gone five years without a recurrence, it is a question whether it would be assuming more risk to accept such a case than is taken every day in some other diseases. Each case must be judged according to the facts submitted. The age of the applicant should be an important factor in enabling us to form a decision.

III. Cases Which Have Recovered from General Peritonitis, Either With or Without an Operation, the Appendix Having Been Excised or Not.—It is generally thought that very few patients survive such an attack, but recovery does occur, and under modern treatment the number which get well is increasing. Are the remote consequences of adhesions more likely to develop after a general than after a local peritonitis? Upon the answer to this question companies should base their decision as to the eligibility of this class of applicants.

The replies received from the majority of those surgeons to whom this question was addressed indicate that there is no difference in the liability between the two forms of appendicitis. Whether there is greater danger of the development of some of the other remote after effects, as abdominal tuberculosis, after a general than after a local peritonitis, I have no means of knowing. With the appendix unremoved, second attacks of peritonitis have been observed. Richardson reports a fatal case which occurred three years after the first peritonitis.

I can see no good reason why the same rules should not govern this class as those given for classes I. and II., excepting that a patient who has had a severe attack of general peritonitis has a protracted convalescence as a rule, and therefore a longer time would be required to establish perfect health than after a milder form of the disease; and besides, there may be a greater risk in this class of cases.

Taking the above facts as a basis upon which to form an opinion, I

should say that cases of this class were eligible for insurance after one year when the appendix has been excised, and after three years when not removed.

VII. Cases of Hernia Following an Operation.—These should be classified with other kinds of hernia, though it has been said that strangulation is not so liable to occur in this type as in the other varieties. The applicant should be required to wear a suitable support.

The above recommendations seem to be justified by the facts obtained from studying the literature of appendicitis and from the opinions expressed by those physicians and surgeons who have so kindly given me the benefit of their large experience. The rule to decline all applicants with a history of appendicitis, unless the appendix has been removed, is in my judgment too stringent; and on the other hand, the rule to accept an applicant after six months with such a history, the appendix not having been excised, is too liberal, as it is assuming too great a risk, excepting, perhaps, in the very mildest cases of the disease.

While the former rule may more safely guard the company as far as the death rate is concerned, it will at the same time deprive many persons of the benefit of insurance to which they are justly entitled; and besides it will turn away an amount of business which should be retained. The company may often suffer as much injury when an injustice is done to the applicant as when, by an error of judgment, a doubtful risk is approved.

I am not strenuous that these recommendations shall be adopted by the association in just the form submitted, but it is my earnest hope that we may be able to formulate some rules which will be uniformly used by all the companies in dealing with this class of cases.—The Medical Examiner.

DISCUSSION OF THE TREATMENT OF HAEMOPTYSIS.¹

The subject was introduced by Charles E. Quimby, M.D., of New York, who spoke of the diversity of method used by various practitioners and teachers, and the great need of setting our approval on what is useful and, at the same time, condemning injurious measures.

Dr. Quimby said: Of the two causative factors, vascular tension and degenerative changes in the vessel walls, it is evident that the latter are not subject to modification within such time as will render them a basis for treatment of an existing hæmorrhage. The possibilities of influencing the arrest of hæmoptysis must, therefore, be sought in one or more of three universally accepted lines:

1. Modification of vascular tension.
2. Increase in the coagulability of the blood.

¹ Meeting of the American Climatological Association at Lakewood, N. J., May 13, 1896.

3. Mechanical and chemical aids to clot-formation.

In the first of these there has been the greatest apparent antagonism of methods. So long as we recognize a gangrene, due to the prolonged use of ergot, no one can well deny that extreme arterial constriction produces capillary anæmia. But all the vaso-constrictors produce systemic even more strongly than pulmonic contraction, and the consequent increase of arterial tension must be transmitted back through the heart and pulmonary veins until it is felt in the capillary circulation of the lung. Even if this were not important, there would seem to be the greatest uncertainty of producing and maintaining the requisite degree of constriction to cause persistent capillary anæmia, and anything short of that must increase the hæmorrhage, for even involuntary muscles soon become exhausted and refuse to respond to the sharpest stimulation. Most serious of all appears to me the objection derived from the pathology of the disease. It is not questioned that mural degeneration of the bleeding vessels is the most important cause of the hæmorrhage, yet it is in these vessels and those immediately adjacent, which also cannot be supposed to have escaped entirely degenerative changes, that muscular contraction is absolutely necessary. If but one of them is unable to respond to the stimulus of ergot, or to bear the increased strain, all arterial contraction becomes not only useless, but absolutely harmful. This argument, with certain clinical evidences that ergot quite as frequently augmented as retarded bronchial hæmorrhage, led me, some eight years since, to abandon the vaso-constrictors and their ally, the ice-bag, which I had been taught to use, and to direct my arterial therapeutics to the development of low tension in the pulmonary circulation. This is accomplished by both active and passive measures. Since muscular action and mental anxiety are cardiac and vascular stimulants, complete rest, both physical and mental, is imperative, not only for its direct influence in quieting the heart's action, but also to increase the influences of other measures. Personally, I make no examination of the chest until the hæmorrhage has ceased, as none of my therapeutic measures are influenced by the location of the trouble, it being understood, of course, that sufficient is known to differentiate a hæmorrhage of phthisical from one of cardiac or other origin. An initial dose of some preparation of opium I regard as routine treatment in all cases, for not only is the general nervous excitement, so often the predominant cause of the vascular disturbance, controlled thereby, but rest of the affected lung is also secured through the co-incident arrest of cough. In cases of profuse hæmorrhage, however, probably less is gained by complete arrest of cough than is lost in the dangers incident to the retention within the lung of large amounts of blood. Morphin should here be used to modify, not to arrest the cough.

Active diminution of pulmonic vascular tension is most fully obtained by, first, general lowering of blood-pressure; second, diversion of the blood

from the lung to other parts. To secure the former, my main reliance is upon aconite, which is given in a full initial dose, and repeated as required to maintain the desired vascular quietude. In cases which present the symptoms of shock from the outset, although often with rather a tense pulse, morphin alone, in small repeated doses, not only relieves the shock but lowers vascular tension and equalizes the circulation.

The blood may be diverted from the lung to the thoracic wall, the alimentary mucous membrane, and the abdominal glandular organs. To this end, in all except mild cases, I apply counter-irritation by means of turpentine stupes or mild mustard plasters, to the entire back and sides of the thorax, endeavoring so to temper them as to maintain a sharp capillary hyperæmia, which is continued until all bleeding has been absent for some hours. In mild cases, a similar and sufficient derivation is more easily obtained by way of the alimentary canal alone.

Having seen some of the "old women's remedies" of my youth reappear in the garb of "modern scientific discoveries," I was led to a consideration of the use of salt, which has resulted in my using it constantly for hæmoptysis, upon what I consider a truly scientific basis. Undoubtedly, a more pronounced and persistent effect is gained from the Epsom or Rochelle salts given to the point of free cathæsis, but I am convinced that a primary hyperæmia of the alimentary mucous membrane is developed more speedily by reflex action through the gustatory nerves from salt taken in the mouth, and that this hyperæmia is sufficient to have a decided and valuable influence on pulmonary circulation. I supplement its action by the more powerful salines in the more severe cases. Since the action of salt is purely reflex, through the nerves of taste, its value does not depend upon the amount taken, but upon its persistent use. In very obstinate cases the more stimulating or irritant cathartics may be given.

As regards the remedies used to increase the coagulability of the blood or to produce a local astringent effect, the possibility of their reaching a bleeding point in any efficient amount always seemed to me so remote that I have never yet prescribed one of the astringents.

Astringent inhalations seem, *a priori*, more reasonable than internal astringents, and a most gratifying experience in the mechanical treatment of pulmonary disease has led to some attempts in rather severe cases of hæmoptysis to develop atmospheric compression of the bronchial vessels by compelling the patient to expire through a restricted opening, as a pipe-stem, straw, or even the compressed lips. A sufficient number of cases have not been seen to justify any positive statements, and the measure is presented rather as a suggestion.

In presenting a summary of my own treatment of bronchial hæmorrhage, no claim is made of anything new; but simply that it is based upon a well-defined principle, has a definite object in view, and that the measures

form a harmonious whole. It includes: 1st, rest; 2d, morphin; 3d, aconite or other vascular sedative; 4th, dry salt and a saline cathartic; 5th, counter-irritation; 6th, obstructed expiration. It includes: 1st, astringents; 2d, ice; 3d, stimulants; and 4th, the vaso-constrictors.

The following statements are the answers in substance of the several gentlemen to this question: "Will you state just what you would do if called to a case of moderate or severe hæmoptysis, it being assumed that it is a bronchial hæmorrhage, dependent upon tubercular disease of the lung?" It was understood that the answers do not include what might be done as a placebo for the patient and friends, nor indicate treatment in detail.

Dr. Delafield affirms these two broad propositions: (1) Such hæmorrhages are never fatal, and are dangerous to life only through the succeeding extension of the tubercular process. (2) No therapeutic measure has any appreciable effect in determining the arrest of the hæmorrhage. He, therefore, limits his treatment to reassuring the patient and making him comfortable.

Dr. Draper follows a rather expectant plan of treatment in the milder cases, but when the hæmorrhage is well defined in a case of definitely determined tuberculosis, his chief reliance is upon full and absolute rest in connection with opium, although he generally gives some ergot. When he has reason to believe that the hæmorrhage is localized and forms a congested area about tuberculous deposit he applies ice to the chest over the seat of hæmorrhage. He never uses the mineral astringents.

Dr. Jacobi regards every bronchial hæmorrhage in phthisis as presenting serious possibilities, having seen a primary hæmorrhage prove fatal in a patient who had never presented any symptoms or been suspected of having any tubercular disease. He insists upon absolute rest, allows no talking, and makes only such examination of the chest as is necessary to determine the seat of the hæmorrhage, which can be done by auscultation alone. He allows the patient but little fluid. In therapeutics he relies mainly upon acetate of lead and opium, though he directs that digitalis be given at the outset, followed by injections of ergot from time to time. The lead he gives in divided doses, uniformly through the day, and thinks it has been condemned by others, because used in too small doses. He states that an adult patient may take from two to four grams of acetate of lead in twenty-four hours, and continue the dose for from two to four days. The lead is given in combination with opium, amounting to daily doses of from one to four decigrams, the indications for the opium being the general quieting effect. The digitalis, on the other hand, he says, should be given in one or two large doses of from eight to ten minims of a good fluid-extract at the outset, and repeated in from six to eight hours. The ergot also is given in an initial full dose, and repeated as may

be necessary to maintain arterial contraction. Externally, he applies ice over the seat of the hæmorrhage, and ligates the lower extremities in severe cases to retard venous flow. In all cases the bowels are opened freely until the hæmorrhage ceases.

Dr. Janeway insists upon absolute rest in all cases, not allowing any physical examination even, except auscultation, until at least four days after the hæmorrhage has entirely ceased. Therapeutically he employs opium, both for its influence on the general nervous excitement, and to quiet the cough when that is prominent. For a direct effect upon the hæmorrhage itself, he regards atropin as preferable to ergot. He gives cathartics to obviate the constipating effects of the opium, and thus to avoid the dangers incident to straining at stool. When the pulse is frequent and strong and not quieted by the opium, he uses aconite. Externally he applies the ice-bag or counter-irritation to the affected side, rather giving the preference, if any, to the counter-irritation. In case the hæmorrhage is prolonged and not arrested by the above treatment, he resorts to inhalations of turpentine, with the proviso that they must be begun carefully, and at once stopped if they excite an irritative cough. He does not employ astringents, but if he did acetate of lead would be the one chosen.

Dr. Kinnicutt gives absolutely nothing by the mouth. He ascribes the very greatest importance to rest, absolute and continuous, physical and mental. Recognizing not only the prominence of nervous excitement and mental shock, and their influence in producing vascular activity, but also the physical and local disturbance produced by cough, he employs morphin, hypodermically, to control the former and moderate the latter. He does not employ ice externally, except in the more severe cases. He has absolutely no faith in astringents or ergot.

Dr. Peabody similarly bases his treatment upon that complete rest which is made possible and fully obtained by hypodermics of morphin. He lays rather more stress, however, upon the value of ice externally for its action in causing a reflex contraction of the pulmonary vessels, and constantly employs ligature of the extremities in all severe cases. Negatively he condemns all astringents as absolutely bad, except acetate of lead, which is thought to have a slight value in cases of moderate and persistent oozing, but to be entirely worthless in severe hæmorrhage. He also specifically opposes all inhalations.

Dr. A. A. Smith also regards absolute all-round rest as the *sine qua non* in the treatment of bronchial hæmorrhage, and he pays special attention to relieving mental anxiety from fear, in addition to securing the usual physical quiet. His medication is begun by a hypodermic of morphin, which he specifically states is *not* to be combined with atropin, on account of the effect of the latter in stimulating the circulation. In addi-

tion, he uses bromide of sodium when there is great mental excitement. If the hæmorrhage starts with a rise of temperature, he uses one of the coal-tar series, of which phenacetin is considered the best. They are intended to quiet an excited circulation, and their dosage is to be governed by this effect. He allows patients to continue the use of salt as a placebo, and is not displeased if it causes nausea, as that is attended by a diminished circulation. Dr. Smith makes special mention of continuing the opiate for several days. He also places his patients on a milk diet at once, and, after allowing them to get up slowly, still restricts their diet, forbidding for some time all red meats, stimulants, and stimulating food. He regards all the astringents as utterly worthless, and ergot and ice, externally, as equally bad.

Dr. A. H. Smith insists upon rest and opium as the basis of all treatment in pulmonary hæmorrhage, making special mention of the dangers from percussion and an over-zealous physical examination. Morphin he uses for its quieting effect and to moderate cough. If the pulse is hard, tense, and small, or if the patient suffers from a sense of oppression in the chest, he uses nitro-glycerin. More commonly he gives ergot, which he regards as especially valuable when the pulse is soft and weak, and in cases of distinctly capillary hæmorrhages, which are moderate but persistent. For the astringents he has no use.

Dr. William H. Thomson lays no great stress upon rest, unless the hæmorrhage comes on with high temperature, or there is reason to believe that the bleeding was started by exercise or physical strain. He relies almost entirely upon acetanilid and atropin, which he gives about every three hours, in doses of from three to four grains of the former combined with one one-hundredth of a grain of the latter. In cases which give the history or present the physical evidences of an antecedent pleurisy, he straps that side of the chest firmly, believing that the tension from old fibrosis is often a prominent cause of these hæmorrhages. He would insist also upon such quiet as would prevent strain of pleuritic adhesions. He does not employ the astringents or ergot, and makes no mention of any external applications or inhalations.

The treatment of bronchial hæmorrhage, as deduced from these reports by a majority vote of eight to one, would be upon the general plan of vascular sedation with a lowered blood pressure, and would include the use of: (1) Rest; (2) morphin; (3) vascular sedatives; (4) ice, perhaps (?) to which may be added in the same line, as having been mentioned without opposition; (5) saline cathartics; (6) ligation of the limbs; and (7) counter irritation in place of ice. It would exclude the use of astringents or vaso-constrictors.

John H. Musser, M.D., of Philadelphia, made a report on the treatment of hæmoptysis as practiced by thirteen physicians of note in that city.

The following is an analysis of the methods adopted:

1. Rest.—This, as was naturally expected, was enjoined by all. In nearly every instance it was urged that the rest should be in the recumbent posture. A number, however, urged that the patient should be in a semi-upright position, or the shoulders elevated. The internal use of opiates was advised by most of the writers, of the bromides by one person. The cough is to be controlled, and this is obtained by the use of opiates also.

2. Local applications.—Cold on the chest, in the form of ice usually, was advised by five of the reporters. In two of the five its use was advocated in hæmorrhages in the second or third stage of tuberculosis only. Most of them required the ice to be applied over the affected part.

3. Diet.—This was referred to by two only. One advised liquid diet, the other a readily digested but not low diet.

4. Inhalations.—The use of inhalations was objected to by three of the reporters, and advocated by one, who suggested that it must not be used if there is much cough.

5. Dry cups.—One of the reporters suggested drying-cup if there appeared to be congestion of the lungs.

6. Internal remedies.—The internal remedies advised may be divided into three classes: (1) Drugs to quiet the nervous system and allay the cough. (2) Drugs to allay arterial excitement. (3) Astringents. All enjoined the use of opium with the exception of two, both of whom, I think, overlooked its use. Morphin, however, was objected to by one very strongly. Professor Hare believes that the use of morphin causes more blood to be sent into the leaking blood-vessel of the lung, and advises the bromide of sodium in full doses by the rectum if it cannot be given by the mouth, and, if the pulse is strong, combined with chloral in doses of five or ten grains. Arterial sedatives were advised by two of the reporters. One thought well of the use of aconite in the hæmorrhage of the early stage of phthisis, or of antipyrin in one or two grain doses with morphin. Another thought that cardiac sedatives were admissible when given in moderate doses for hæmorrhage in either the first or second stage. By some, astringents were advised without qualification; by others, their use was admitted, although their value was doubted. Thus, one reporter says he uses ergot in early hæmorrhages with grave doubt; another, that he uses ergot and gallic acid, but does not believe they are of much account. They are given, however, with the hope that they may be of service. The following are recommended: Ergot or ergotin by the mouth or hypodermically, turpentine, gallic acid, fluid extract of hydrastis, the oil of erigeron, acetate of lead, sulphuric acid, *Lycopus virginica*. Gallic acid is advocated by the majority of the reporters. Ergot is advocated by five. Its use is not mentioned by four, and two report against it absolutely, and two others consider it of doubtful use. Acetate of lead has two advocates,

turpentine two, and the other astringents one each. One of the reporters considers turpentine the only hæmostatic of any value; another thinks turpentine or terebene of greater service than any other drugs in the late hæmorrhages of tuberculosis, particularly if combined with morphin and antipyrin. Common salt was advised by one of the reporters.

Most of the reporters agreed that the treatment was the same, whether hæmorrhage took place in the first or later stages. One of them insisted on small doses of astringents in the first stage, and of large doses in the latter stages. Another insisted on the local use of ice in the latter stages only; another, that turpentine should be used at this period. One insisted that the recumbent posture should not be assumed when the hæmorrhage took place late in phthisis, and that opium should not be given or the cough in any way allayed at this period of the disease, on account of the danger of the accumulation of blood in the air-cells. Apparently, from the above, no difference in the treatment of the two stages existed.

From this review it may be said that the treatment of hæmoptysis, as followed out by representative practitioners in Philadelphia, includes rest, mental and physical, the local application of ice, the use of opium, and, with considerable doubt as to their value, the use of astringents of the class referred to in the above analysis.

Dr. Musser fully indorses the above in so far as rest, ice and opiates are concerned; he is not willing to indorse the use of astringents. He would urge the use of dry cups in certain well-defined conditions, and favors the use of saline catharsis if the patient is robust and the condition of the primæ viæ points to its necessity.

Algernon Coolidge, Jr., M.D., of Boston, reported the practice of eighteen physicians in Boston: Seventeen gave the preference to opium among drugs, ten preferring morphin as the best form of administering it. Three allowed codein as a substitute. Six used ergot as a routine measure; but of these four doubted its usefulness, eight found it useless, and two considered it positively harmful. Seven were opposed to high altitudes, while five considered high altitudes not contraindicated.

R. H. Babcock, M.D., reported the practice of twenty-seven physicians in Chicago. Of these eighteen insist upon absolute physical rest in recumbent or semi-recumbent positions, and three added that they permitted no talking. Cold to the chest is ordered by thirteen, usually in the form of ice. Nine administer opium, and eight morphin hypodermatically. Ergot is employed by fifteen, a few, however, stating some doubt as to its utility. One said he thought ergot only proved efficient when in doses sufficient to produce nausea. One administers Tancret's ergotin, hypodermatically, in doses of from six to eight minims, and mentioned no other treatment. Eleven are positive that ergot has no efficacy. Six make use of acetate of lead, either with or without opium; two tannic

acid, two gallic acid, one dilute, and another aromatic sulphuric acid. Six prescribed ipecac, five the syrup, and one the powder in an emetic dose, after the manner of Trousseau. Four gave aconite, and two *Veratrum viride*. Salt is recommended by seven, one of whom relies largely upon it. Four advise mild laxatives, but do not specify the particular laxative employed, except the advocate of salt, quoted above, who recommends phosphate of soda. One only employs sprays to the larynx and trachea of solutions of iron, liquor ferri subsulphatis, ten to twenty minims to the ounce, or the tincture of the chlorid of iron, from twenty to thirty minims to the ounce of water, repeated three or four times daily. One uses phenacetin internally, depending upon the cause of the hæmorrhage, and after the attack rest, light diet and tincture of iron internally. Two speak of employing ligatures to the extremities close to the trunk during the attack, one specifying constrictions of the lower extremities to prevent the return-flow of blood to the lungs. With one, hæmoptysis ceased twice after atropin, hypodermatically, had produced dryness of the mouth. The advisability of light, unstimulating diet was dwelt upon by three.

Dr. Babcock relies on the use of phosphate of codein, hypodermically, or by the mouth, to quiet the cough; syrup of ipecac to the degree of nausea; Hunyadi or Rubinat water to open the bowels. He employs a hypodermic injection of one-fiftieth or even one-twenty-fifth of a grain of atropia sulphate to stop hæmorrhage.

Dr. S. E. Solly, of Colorado Springs, said; Hæmorrhage from large vessels and large cavities is relatively more frequent in Colorado than elsewhere, though the general tendency of altitude, through lowering blood pressure, is undoubtedly to diminish the frequency of hæmorrhages, and this belief clinical statistics confirm.

The first great danger in profuse hæmorrhage from a large vessel is the drowning out of the patient by the blood, and it is advisable to turn him in such a position that the blood can flow readily out of the mouth; the plan of laying him on his back in bed is the worst possible position when he is freely bleeding.

The application of ice to the heart seems to quiet the organ, and thus assist in checking the hæmorrhage. I am skeptical about the value of astringents, such as tannic and gallic acids, nor have I been satisfied with the use of large doses of lead, as recommended by Williams.

My clinical experience has been favorable to the use of ergot in large doses, given subcutaneously, at intervals of from four to six hours in the twenty-four. I believe a common cause of failure with ergot is its irregular and insufficient use and administration by the mouth. There are, however, cases in which ergot is absolutely useless.

I also regard atropin as an extremely valuable remedy in serious cases, particularly in those in which ergot has proved a failure. But it

must be given hypodermically, in large doses, such as the one-fiftieth of a grain. A small dose of atropin is not beneficial. Thus morphin is best given without the usual one-fiftieth of atropin. It is stated that atropin in small doses raises the blood-pressure, while in large doses it lowers it. The reason that atropin is often successful in cases in which ergot is a failure may be because in certain conditions lowering the blood pressure, as by large doses of atropin, is essential to success, though in certain other conditions raising the pressure is no detriment, or not sufficient to offset the other beneficial qualities of ergot.

Opium in some form should always be given, as well as other suitable remedies, when it is desired to arrest the hæmorrhage and check cough. But there are cases of congestion in which it is unwise to do this.

Dr. W. D. Robinson, of Philadelphia: I have used calcium chlorid with success, and find that, given between the bleedings, it is of advantage.

Another agent that I use is morphin, given to the degree of profound narcosis. I have given one-eighth of a grain once in forty minutes, until the patient is deeply under its effect. By stopping cough and local irritation we put the parts in splints, as it were, until firm healing of the bleeding point obtains. The morphin in full doses, by which the patient is kept practically in unbroken, sound slumber for from eighteen to twenty-four hours, is especially efficient in cases of frequent recurrent bleeding. The drug that I have found most prompt and efficient in stopping a hæmorrhage has been the hydrochlorate of hydrastin in one-fourth grain hourly doses, hypodermically.

Dr. Boardman Reed, of Atlantic City: Regarding the use of ergot in these cases, I have not found it of any value, and have even thought that in some cases the results were positively harmful by contracting the arterioles throughout the body generally, and thus raising the blood-pressure. The mineral astringents have done good service in my hands, especially the aromatic sulphuric acid and gallic acid. There can be no doubt that these drugs increase the coagulability of the blood and thus assist directly in lessening the tendency to hæmorrhage.

Dr. R. C. Newton, of Montclair: I wish to say that bromide of potassium fills the indications in many of these cases, especially when used in conjunction with Dover's powders and an ice-bag to the chest. Each case must, of course, be managed according to the surroundings and the indications. Dr. Babcock's suggestion of large doses of atropin, hypodermically, is a very good one.

Dr. Jas. B. Walker, of Philadelphia: I am glad to hear Dr. Fisk speak of oil of erigeron. I have long depended upon its congener, oil of turpentine, in hæmorrhages from mucous membranes, and am surprised at the few references to its use in text-book and journal articles. In hæmoptysis it is of special service, and this is not surprising when its hemostatic

properties are so well known, and its appearance in the expired air a few minutes after its administration by the mouth shows how quickly it reaches the scene of action. I usually administer it in five-minim capsules (sealed), every four to six hours. The use of the terebinthinates in hæmorrhage was vaunted by John Hunter, he claiming that it was the only true styptic.—Medical News.

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PROCEEDINGS OF SOCIETIES.

RICHMOND ACADEMY OF MEDICINE AND SURGERY.

Regular Meeting Held October 13, 1896.

Dr. Landon B. Edwards, President, in the chair.

Dr. Mark W. Peyser, Secretary and Reporter.

Dr. J. N. Upshur read a paper on "A Case of Protracted Labor, etc."

DISCUSSION.

Dr. Paulus A. Irving thought it remarkable that there was no hæmorrhage from the site of the uterine tear. Another striking feature of the case was the low temperature in spite of the large amount of pus dammed back—the more remarkable when we consider how a little excoriation or tear of the os or cervix is so often followed by a rise of temperature—sometimes even to 104° F. He commended Dr. Upshur for his most admirable treatment and successful issue, especially in the employment of hydrogen peroxide. Nothing could be added to it.

Dr. Lewis M. Cowardin called attention to the fact that hydrogen dioxide affected not only pus but all organic fluids. Where a blood-clot was to be dissolved he knew of nothing more efficacious.

Dr. J. S. Wellford thought hydrogen dioxide a better disinfecting agent than all others, because it produces super-oxidation of all effete matters, liberating, in the body, ozone. In employing it we irritate the processes of nature, changing the specific character of the ptomaines.

He asked Dr. Upshur the positions of the placenta and abscess in relation to the tear.

Dr. Arthur Jordan spoke of a case in which he had successively used creatin, bichloride of mercury solution, hydrogen dioxide, and hydrozone. Hydrogen dioxide had given better results than the first two, but pus was more diminished with two injections daily of hydrozone than three of hydrogen dioxide.

The President stated that in his practice a vaginal douche of hydrozone (Marchand) prevented the third day fever of the puerperal state. His experience, with that of Drs. Irving, H. M. Taylor, Edward McGuire, and

others, in some cases of puerperal sepsis, had shown the great value of intra-uterine injections of hydrogen peroxide and hydrozone—simply keeping the os uteri well dilated so as to give free egress to the foaming pus, etc., that pours out. He uses a half pint to a pint each injection—diluted or not with water. Marchand's preparations are those on which he relies.

Dr. Upshur, in closing the discussion, said the placenta was above and posterior to the rupture, the abscess being seated in the bottom of it.

He has firm convictions with regard to the value of hydrogen dioxide. Often the efficiency of applications to the cervix, externally, and canal, is lessened by a skin of mucus that cannot be wiped away by cotton. In cases of this kind, the dioxide on an applicator will dissolve the mucus, allowing the application to come in contact with the tissues.

For cleansing purposes, he preferred a simple solution of hydrozone or hydrogen peroxide to the chemical agents, such as bichloride of mercury, carbolic acid, permanganate of potassium, etc.

Dr. G. K. Sims read a paper on "Diseases of the Rectum and Anus." [See page 705.]

The Secretary reported a case of horse-shoe fistula successfully treated with hydrozone. Girl, aged 15 years. An abscess developed on either side and above the anus, which were on the point of rupturing. Both were incised, and afterward injected with hydrozone until the discharges came away clear. The solution made its way from one opening to the other, demonstrating the presence of a horse-shoe fistula. In a week, it was in a fair way to recovery.

REPORT OF CASES.

Large Hydrocephalic Head at Delivery.

Dr. Wm. H. Parker. Mrs. C., white, age 30 years. Sixth pregnancy—overdue a fortnight. On September 10 labor began, becoming active on the 12th, delivery occurring normally on the 14th. The child was hydrocephalic, and born dead. The head was nineteen inches in circumference, thirteen inches from ear to ear, fourteen from nose to occiput. All previous labors had been tedious, one lasting ten days. In April previous a prolapsus of the uterus had been corrected, the hydrocephalic pregnancy occurring immediately afterward. There was no pelvic deformity.

Dr. Jordan prefaced a report by the following questions referring to hydrophobia:

First. Is there any more danger in the ordinary bite of a dog and that of one supposed to have been bitten previous to any manifestations on the part of the bitten dog?

Second. While one is in a state of doubt, what plan of treatment

should be pursued, taking into consideration the moderate pecuniary circumstances of the patient?

He then related that a little dog had either received a blow or had been bitten on the left side of the head above the ear. There was nothing positive as to the cause of the injury.

Inquiry failed to reveal a supposed mad dog in the neighborhood. Two weeks passed, and there was no manifestation of rabies. Then the dog bit a child, aged 18 months, that had been teasing it, on the back of the hand. The father immediately and thoroughly sucked the wound and cauterized it with carbolic acid. It progressed nicely, the swelling passed off, and the wound got well with three separate and distinct scabs—one large, a second smaller, in which had formed the third, which now remains.

After biting the child, the dog was sent away. Eight or nine days elapsed before any symptoms occurred in the dog, and then it died after a series of not well defined spasms.

New York, October 8th, 1896.

Dr. Arthur Jordan, M. D., Richmond, Va.:

Dear Doctor: We have received your letter of the 7th instant, and, in answer to your inquiries, beg to say that in the case you mention it may be that the child has not been inoculated with the virus of hydrophobia, although we are not positive about this, as experiments have shown that in some cases the saliva is virulent as many as six days before the animal presents any symptoms of hydrophobia.

The fact that the little patient has suffered no inconvenience from the wound does not mean that all danger is averted, as the period of incubation varies between two weeks and one year, or more.

As for the possible treatment of the child, we would say that it might be too late to apply it, especially if the patient has been bitten on the face or hands, as a period of more than ten days has elapsed since the infliction of the bite. However, if you think it advisable to send the child here for treatment, we are willing to try our best in his behalf.

We beg to add that the person who sucked the wound has exposed himself to a great danger of infection in case the saliva be virulent, and the lips and mouth of the operator be not perfectly sound at the time.

Yours truly,

NEW YORK PASTEUR INSTITUTE,

Per F. T. LABADIG,

Physician in Charge.

Dr. Jacob Michaux said that there was a strong element of doubt regarding the condition of the animal before the child was bitten and as to the cause of death; also as to the existence of rabies in the neighborhood before the dog was injured. Because of the wound found on the dog's

head, there is a reasonable probability that meningitis caused the spasms.

Of all sensational things, hydrophobia is the greatest in the popular mind. It is a mistake to have the dog killed. If a person is bitten, it is thought, the mere killing prevents hydrophobia. The dog should be watched. A cause of convulsions, which should not be overlooked, is heat.

Dr. Wellford said the dog should be kept alive ten or twelve days. Dr. Jordan will not have any trouble with his little patient. If the child had been older, he might have trouble by mental impression or apprehension. He thought a great deal of reported rabies is hysteria. He had seen, in all his long practice, but one case of rabies satisfactorily demonstrated. Fright, fear and alarm causes death from nervous exhaustion. He believed that keeping a patient under chloral and chloroform for five or six days would obviate their effects. In the case reported, the prompt and efficient measures instituted would have saved, even had the animal been rabid. If the dog had been eating meat at the time, there might have been danger of septic infection.

Dr. Jordan said the dog was not killed, but died. He realized the strength of mental impressions. Post-mortem examination showed no meningitis or encephalitis.

Bolus of Hair Causing Bowel Obstruction and Requiring Laparotomy.

Dr. J. S. Wellford exhibited a bolus of hair, about an inch and a half in diameter and three inches long, removed from the small intestine of a girl aged fourteen. There were appearances of beginning menstruation. Pain appeared first in the right iliac region, but soon spread over the whole abdomen, and was intense. There was no fever or increase of pulse, and bowel operations were small. Dr. Long was called in consultation and thought it a ruptured appendicitis. Upon operation, this bolus of hair was found completely occluding the lumen of the intestine. There was violent vomiting, which, just before the operation, became stercoraceous.

Dr. Virginius W. Harrison reported the case of a boy, aged three years, who had been in the habit of eating wall paper, and finally passed balls of it. Constant surveillance was necessary to keep him from it.

Dr. Upshur reported a case of puerperal mania. The patient had been afflicted for six or eight years with chronic diarrhoea. Previous to her marriage she had been a shirt maker. During the spasms, she passed a large ball composed of cotton threads, which it is supposed she swallowed in biting off threads to thread her needles. The interesting point here is not the obstruction, but chronic diarrhoea which resulted. After recovery from mania, she was put on treatment for the diarrhoea and is now entirely well.

Dr. Drewry Recommended as Superintendent of Central State Hospital.

On presentation by Dr. J. N. Upshur, resolutions recommending Dr. W. F. Drewry, now first assistant physician to Central State (Lunatic) Hospital, Petersburg, Va., as superintendent of the same on the retirement of the present officer, were unanimously adopted.

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ABSTRACTS.**A CONTRIBUTION TO THE PATHOLOGY OF EPILEPSY.**

A Report of Two Cases in which a portion of the Cortex was Excised and Examined

By JOSEPH COLLINS, M.D., New York.

(ABSTRACT.)

The writer first referred to the difficulty of determining what the exact status of the value of trephining for epilepsy was at the present time, and pointed out the necessity of limiting the phrase operation for epilepsy to trephining, removal of the dura, and excision of the cortex. He believes that the indications for operation in epilepsy are very limited, but that such indications occur in Jacksonian epilepsy, and with extreme rarity in so-called idiopathic epilepsy. Operation is indicated in Jacksonian epilepsy when there are evidences of irritation of a circumscribed motor cortical area; it matters not what such irritation may be caused by. Operation is indicated in so-called idiopathic epilepsy when the convulsive attack begins with and is confined to the same localized spasm, and especially if such localized spasm be the only convulsive manifestation. The points to which particular attention were directed in the first case were the careful clinical study; the exact location of the lesion; the early operation, the patient having had only two or three attacks, and the distinct pathological lesion.

The patient was a boy 20 years old, in which there was neither history of epilepsy nor of trauma. His first attack was on the 29th of November, 1894, and was a typical "haut mal" attack, preceded by twitching movements of the thumb and index finger. Two or three times that week he had some twitchings in the fingers not accompanied by loss of consciousness. When he came under observation, examination showed no defect of station or gait, exaggeration of the right knee-jerk, some ankle clonus of the right leg, and grip of right hand somewhat weaker than the left. Right triceps reflex livelier than the left. Sensibility of the right side bad. Sensibility of the entire body normal. No suggestive ocular conditions. Preliminary operation performed by Dr. Gerster consisted of removing the vault of the skull covering the cortical area for the right hand.

Second operation three days later. The cortical area for the right hand was cut out, the patient made a good recovery and was discharged from the hospital two weeks after the operation, and with the exception of some severe epileptical form of attacks shortly after the operation, the patient has been free from manifestations of epilepsy since that time, now one year. The paralysis of the right upper extremity which occurred shortly after the operation, has almost completely disappeared, and the patient has been able to earn his living as a clerk.

Since the operation he has been taking small doses of bromide of potash.

The important pathological findings in the pieces of cortical tissues removed were:

I. Meningo-encephalitis. This seems to have been chronic in character. To this was added the acute exacerbation, which probably occurred in the interval between the second and first operation.

II. Marked obliteration in the blood vessels of the pia and cortex. This vascular change was associated with the formation of new capillaries which appeared to have undergone hyaline degeneration.

III. Slow degenerative changes in the ganglion cells. The neuroglia hyperplasia in the cortical areas, although distinctly demonstrable, was not very marked.

IV. Softened areas must have resulted from the obliteration of some of the blood vessels just at the junction of the gray matter with the white, where the blood supply is poor.

V. Replacement of this softened area by true neuroglia tissue. This was well demonstrated in the specimen which shows both areas and neuroglia tissue closely associated together in such a way that surrounding each excision of softening there is an advancing zone of neuroglia tissue.

The second case was a married woman 30 years old, of good family and personal history, who had suffered for six years from convulsive affections, which she referred to as a cramp in her leg, and which later became associated with typical "haut mal" attacks. These attacks gradually became more frequent, until she had twenty marked attacks in the legs, and two "haut mal" attacks in twenty-four hours.

The cortical area in which the left leg center is situated was outlined, and the corresponding opening made in the skull by Dr. B. F. Curtis. The dura was laid back, and the cortex excised. Two days later sections from the removed cortex showed the presence of a large number of hæmorrhages scattered throughout the entire section, but particularly conspicuous in the deeper part of the cortex that is nearer the line of section.

The specimens prepared after the Nissl method, show distinct and

striking changes in the cells of the large pyramids. In addition to the great scarcity of the cells, there are protoplasmic processes, are then shrunken and attenuated. They strain more deeply than normal cells, and refuse to differentiate.

Only a few of the large pyramidal cells met with present a normal appearance.

The speaker did not think it well to advance any opinion based on knowledge obtained from the study of these cases, as to pathology of so-called idiopathic epilepsy, as he was keenly alive to the liability of error in generalizing on individual cases. He would, however, emphasize the necessity of cortical excision in operations done for epilepsy, because these cases, as well as others recorded, such as Van Giesson's show, that distinct lesion was frequently demonstrable.

DISCUSSION.

Dr. M. A. Starr, in discussing the papers on epilepsy, said: Concerning operations in epilepsy I have had a number of patients operated upon and have tabulated them from my case books. There are 24 of them, of which 13 were reported in my "Brain Surgery." The cases there reported as cured, were reported too early.

In none of the 24 has there been a cure. Although in some cases the interval between the operation and the recurrence has been from one to three and a half years, yet in none of them has relief been permanent. I consider that the cases were operated upon long enough ago for us to arrive at some definite conclusions, as the first operation was done in October, 1889. These patients were carefully selected. I have never had a case of idiopathic epilepsy operated upon, nor any case in which there was a very long duration between the trauma and the fit. I have really taken most of the precautions that Dr. Sachs recommends. It is my firm conviction that these operations should not be done by general surgeons, but only by a few men who have had a large experience and who have been fortunate enough to see a good many of these cases. I am sure, the surgeons present will coincide with me in this, as it is a very dangerous thing for us to recommend operations that will be done by surgeons of little experience in this field of surgery. It is really a specialty of surgery and I wish to enforce this particularly. All my operations have been done with great care and the cases have been carefully collected, but I have to report 24 operations for epilepsy without a cure. This is very discouraging, and I am very reluctant to recommend operation any more. I now say to these patients that while something may be removed that may be of interest to the pathologist, we cannot promise much for the patient.

With regard to these operations, the excision of a cyst is very unsatisfactory. When the wall is removed the fluid reaccumulates. When the

cysts are very large, as I have sometimes seen them, the patients may die on the table during the evacuation of the cyst. In surface clots the result is also unsatisfactory. In one of my cases hemiplegia with epilepsy in a child, the hemiplegia had persisted for three months. Dr. McCosh exposed a considerable area of the motor cortex and after laying back the dura we discovered a clot lying upon the inner surface. This was scraped off and then a curette was passed under the dura, and the inside of the dura was curetted, removing a large clot. The child has since recovered partially from the hemiplegia, but there has been a recurrence of the epilepsy and the child is no better. Even in cases that are operated upon early, therefore, the results have not been good.

As for excising brain tissue, that I have done too, but even after the excision of scar tissue or of normal tissue there has been a recurrence of the attacks of epilepsy. The scar resulting from the wound of the brain may act as an irritant. In some cases, as a primary result there is a certain amount of paralysis, but this passes off. I do not think, however, that permanent cures of the epilepsy is to be expected from such incisions or excisions.

As to abscess of the brain, it has been my fortune to see twelve cases, of which all were operated upon. I have made the diagnosis of abscess in two other cases; but a thrombus was found in one after death, and general meningitis in the other. In one case, the abscess was to have been operated upon at nine o'clock, but the patient died suddenly at seven, from a rupture of the abscess into the lateral ventricle.

In the 11 cases operated upon, the abscess was found in each case either at the operation or at the autopsy. Of these patients three recovered. Some of these cases were seen with Dr. Knapp, some were seen at the New York Eye and Ear Infirmary, with Dr. Gorham Bacon, and four were seen with Dr. McBurney. The majority of these cases occurred subsequent to ear disease. I cannot confirm some of the statements of McEwen regarding symptoms. If you have read his book you will think it possible to make a correct diagnosis in all cases. The temperature is not always low in abscess. There are cases of brain abscess that have irregular temperatures, varying between 98° and 106° twice a day. I have seen such a case, and advised against operation, on the theory that the case was one of thrombosis with pyæmia, but it was operated on, the abscess was evacuated, and the patient is now perfectly well. You cannot rely upon a low temperature nor on a slow pulse rate as diagnostic symptoms of abscess.

One of the interesting symptoms of brain abscess subsequent to ear disease on the left side is aphasia. This is of the subcortical type of Wernicke.

Thus one patient presented the following symptoms: He had per-

fect power to understand what was said to him and to read; and he had no word-deafness nor word-blindness, but the association between the thing seen and the word for it or between the object named and its appearance was impossible. When the object named was concealed from him, he could not recollect how it looked, nor could he name objects shown to him. An abscess was found in the temporal lobe which divided the fibres joining the temporal and occipital regions, and thus destroyed the associations between visual and auditory memories, though the memories themselves were intact. He recovered after evacuation of the abscess.

I saw a case of right unilateral epilepsy recently which had been operated upon, and in which the symptoms pointed to a tumor in the left hemisphere, as the cause. The patient had epileptic convulsions with right unilateral paralysis, and an operation was done over the left hemisphere, but at the autopsy the tumor was found in the right hemisphere. There was perfectly good decussation of the motor fibres, in the medulla. Such a case is inexplicable.

As to the operation itself, I am convinced that trephining is less useful than the flap operation. I have not seen the saw used which has been shown by Dr. Gerster. The instruments that Dr. McBurney uses are a very fine gouge and a chisel. He has been particularly skillful with these operations upon the head, and particularly rapid. The last operation that he did for me with a fairly thick skull in an adult, was done in $14\frac{1}{2}$ minutes, while the previous one took 17 minutes. This is pretty rapid work, for I have seen it take 25 minutes to get through the skull with a trephine. The chisel that he prefers is a very fine one, which is very sharp and narrow, and I have yet to see any accident from this operation.

The diagnosis made by Dr. Thomas of his case was certainly very interesting, and in examining the patient I only confirmed his diagnosis. I should like to mention that I have been able to confirm McEwen's statement as to the change in the percussion note on the skull over the tumor. Dr. Thomas noticed as I did that there was marked flatness over the region of the left second frontal convolution, and that the difference in the percussion note as contrasted with that of the opposite side was very marked.

As to the condition of exophthalmus, I can understand very well how this can be caused by brain tumor, even when the tumor is not behind the eye. Some light was thrown upon this as being due to displacement of the brain, by an autopsy in a case seen recently at the New York Hospital. A tumor of the superior parietal convolution caused so much pressure in the left hemisphere as to force the callosal convolution that lay just beneath the falx cerebri over the other side. In this case we thought we

had found a secondary tumor of the callosal gyrus at the autopsy, but when we came to dissect the brain, it was found that the pressure had been so great in the left hemisphere that it had pressed the hemisphere downward, and over to the right side beneath the falx. The tumor in the frontal lobe undoubtedly pressed the entire brain mass downward upon the cavernous sinus, and thus produced the exophthalmus.

Dr. W. W. Keen, in discussing the papers on epilepsy, said: As to the surgical part of Dr. Thomas' case I will say a few words. The diagnosis I consider was one of the most exact that I have ever had occasion to see, as the tumor was precisely at the point that had been indicated. I made an incision from just below the temporal ridge parallel around to the front; I then went back to the fissure of Rolando and then back again to the temporal fossa. So great was the intra-cranial pressure that the flap was raised nearly a centimeter above the general level of the skull. I have marked this skull where the fissures are seen and the piece of paper represents the flap. I employed a chisel and I think Dr. Thomas will agree with me that it did not take over fifteen minutes. In view of the slight exophthalmus there was some doubt as to the position of the tumor, i. e., whether it began at the base of the second frontal or on the orbital surface, and that was the reason that led me to make the incision along the forehead. I was particularly anxious to see if there was anything on the orbital surface. I nibbled away some of the bone, being careful to take small bites, so that if the sinus was opened I could plug it up with Horsley's wax, but it was not opened. I then lifted the frontal lobe and could see beyond the lesser wing of the sphenoid, and could get my finger in, but nothing abnormal was perceived. I then opened the dura parallel with the edge of the bone, and the moment this was done just at the point indicated, a large portion of the tumor protruded through the ruptured cortex. After tying the vessels, to my great surprise, I found that I was able to shell out the tumor completely. I took three fingers and simply scooped it out. The tumor was absolutely delimited, and was entirely separate from the brain. During the process of enucleation I noticed considerable fluid escaped, and I expressed the opinion that probably the ventricle had been opened. On inspecting the bed of the tumor and removing the clot I could see the lateral ventricle widely opened. Whether I saw the middle of the ventricle or whether it was the posterior or the lateral horn, I am not quite sure, but the ventricle was widely open, more so than I have ever seen. The question then arose, now what shall I do with it? I was a little averse to packing with gauze, but I feared that probably not finding as ready a vent externally as it did into the ventricle the blood would accumulate, pass into the third and even into the fourth with fatal results, and consequently I determined to pack it. I packed the anterior portion of it from the bed of the tumor with a strip

of gauze and left the end protruding from the opening. So far the result has been very satisfactory, as the patient was out of bed in two weeks.

I consider the prognosis fair or even good. Most of you will remember Durand's case, in which the tumor was even larger than this and in the same position and of the same character, and the patient was alive four years after the operation. I would call attention to the fact that as a result of so much injury to the brain by the tumor and the surgical interference, paralysis very frequently exists. The paper on this skull shows the size and shape of the tumor I removed, and if you will observe here, you will see that the tumor must have reached to the fissure of Rolando, involved the first frontal, the whole of the second frontal, and considerable of the third frontal, yet there was very little motor paralysis. There was nothing but a moderate paresis of the lower face and a moderate aphasia. After the mechanical interference, there was no additional paralysis, but there was a diminution in the aphasia. I have the tumor here and also a drawing, which may interest some of you. The tumor turned out to be a hard sarcoma and this encourages me in the prognosis.

I thought you might be interested in seeing the tumor which I removed in December, 1889, from a patient who is to-day still doing well. It seems as though the removal of large tumors was less dangerous than that of small ones. If this be true, it is probably due to the fact that in searching for smaller tumors, we are apt to inflict an amount of injury upon the brain which is incompatible with recovery.

A few words as to the papers on the results in epilepsy. During the ten years since modern brain surgery began, the advancement has been very conspicuous and I am glad to say that, as a result we are able at the present time to draw some reasonable conclusions. In my own cases of epilepsy, I have reported but few of them, for the reason that I wanted to be able to draw some reasonable conclusions from them, conclusions only to be reached after considerable time. I think it is incumbent upon all of us to collate after a time all of our cases and the final history of each. By this means we may learn the correct result. My own experience in this matter, although I have not collated it, has been a moderately large one, and I am rather between the position occupied by Dr. Sachs and that occupied by Dr. Starr. I must say that (although many of my cases have passed out of my observation and may have entirely recovered) I am not able at the present time to report a single known case as cured. By cured, I mean that after a reasonable time has elapsed the patient has had no fits. I would not be willing to accept one year, and I would scarcely be willing to accept two years. I think that in all cases of epilepsy we should exact the same time limit that a surgeon does in the case of cancer. We regard those cases as cured at the end of three years. I believe that in epilepsy we should certainly say two years, and I am

rather in favor of three. Occasionally, even at the end of three years, the patient may be no better, but I have seen many cases of great amelioration. I am not disposed to take quite so pessimistic a view as Dr. Starr and not quite so hopeful a view as Drs. Sachs and Gerster. I believe it is worth while in most cases of Jacksonian, traumatic, and even local epilepsy, to operate, and I think the results will be satisfactory in a sufficient number of cases to warrant this. If I, personally, had epilepsy, I would run the risk of any operation rather than go through life with such a frightful disease as this. I am sure there is not one in this room who has not found among parents an almost unanimous willingness to have the one chance in a thousand tried in preference to suffering. In idiopathic or essential epilepsy I would not operate.

I am especially glad that attention has been called by Dr. Sachs to the time limit as to the onset and the duration of the attacks, as this is certainly a very important point. The earlier after the injury that we are able to operate the greater will be the probability of relief. In cases that have gone on for many years I have always refused to operate, but it is impossible to draw a hard and fast line. Where epilepsy has existed for six years or more, I should hesitate to do any operation whatever.

It is encouraging to know that in the cases that have been related to-day, improvement, which had been absent soon after operation, has been observed later, and this agrees with what I have already stated. We must have a certain time to reach definite conclusions, and it will require at least twenty years experience before these mooted questions can be settled to the satisfaction of the profession.

I must express my gratification at the able papers that have been read here to-day. The localized pathological changes are excellently given. I do not think we shall ever cure fifty per cent. of the cases, but we can benefit a sufficient number to make it worth while to run the risk of trephining.—The Journal of Nervous and Mental Disease.

MITCHELL'S ANTISEPTIC FLUID.

(H. M. H.) The "formula" you submit is taken from a paper read by Dr. Hubbard Winslow Mitchell, of this city, before the American Medical Association, at its recent meeting, at Atlanta, Ga., and it appears in the August 15, 1896, issue of the Journal, in the following language.

"The composition of the 'fluid' is as follows:

Sodic hypochlorite	7 grams
Potassic hypochlorite	7 grams
Magnesium chlorid	1.5 grams
Calcic chlorid	2 grams
Hydric chlorid	2 grams
Chlorim	5 grams

Potassic sulphate	1.5 grams
Magnesian sulphate	.5 grams
Aquæ	1000 grams

Sodic carbonate, potassic carbonate, equal parts added in sufficient quantity to bring the solution to the proper degree of acidity."

We can give you no definite instructions for compounding the above. It is quite probable the author never intended that the pharmacist should dispense the "fluid." Who or what is to tell the dispenser when he has added a sufficient quantity of equal parts of sodic and potassic carbonates "to bring the solution to the proper degree of acidity?" The doctor is very obscure at this latter point, for upon the "proper degree of acidity" may depend the therapeutic value of the "fluid." This end reaction puzzles us. It is evident that the author intended to "personally supervise the manufacture of the fluid himself." See this journal, December 19, 1895, page 781.—The Pharmaceutical Era.

THE SERUM TREATMENT IN GRAVE SCARLATINA.

In the *Presse medicale* for August 26 M. Roger contributes a long article on this subject, of which the following is the substance: Scarlatina, he says, would be a comparatively benign disease, at least in adults, without the secondary manifestations which too often follow it. However, in spite of the frequency of otitis and nephritis and of the dangers to which these complications expose the patients, the mortality is not very high. Out of a hundred and eighty-three cases which came under M. Roger's observation during a period of six months, only two patients died. In one case the patient had secondary syphilis. The scarlatina was not very intense and recovery took place rapidly; the albumin disappeared on the tenth day and the patient seemed to be fully convalescent, when, on the twenty-eight day, albumin was again found in the urine. The patient was put immediately on a milk diet, but on the following day she was taken suddenly with a terrible attack of suffocation and died in a few minutes. At the autopsy, besides the renal lesions, a subacute œdema of the lungs was found. It is very certain, M. Roger thinks, that in this case death was not caused by the fever, but by the renal lesion which was provoked by the primary infection or by a secondary infection. In the other case death ensued after the eruptive period. When M. Roger saw the patient he prescribed cold baths and a subcutaneous caline injection, but before the treatment could be begun the patient died suddenly. At the autopsy the usual lesions of intense fever were found; the blood was fluid, black, diffuent, and badly coagulated; there was intense congestion of the viscera; the cortical substance of the kidneys was dotted with red spots, and the spleen was enormous. The bacteriological examination revealed the presence of streptococci in the blood and in the viscera. It seemed

difficult, in spite of all this, says M. Roger, to attribute death to a secondary infection, for it was a true case of malignant scarlatina.

M. Roger gives a detailed account of another case in which he determined to use active therapeutic measures and procedures which had given successful results in other infectious diseases. The prognosis of the disease seemed to point to a rapidly fatal termination, and he resolved to make a trial of the serum treatment. The preparation for this occupied an hour, and during that time the patient's condition became worse, so that death seemed imminent. At eleven o'clock in the morning phlebotomy was practised on the patient, and afterward eighty cubic centimetres of defibrinated blood, which was taken from a patient convalescent from scarlatina, were injected under the skin of the abdomen. Five hours later the patient was sleeping quietly and breathing easily. When he awoke and moved the respiration changed and became of the Cheyne-Stokes type; the pulse was 120 and feeble; the tongue was moist; the temperature, however, remained high and no urine was passed. A bath of 82° F. was then given and the temperature began to fall. Three hours later twelve ounces and a half of saline solution were injected subcutaneously and in an hour urine was passed. Two hours later the patient was sleeping quietly; the pulse was 100, and the respiration 25. On the following day the patient was completely changed; he felt better and asked for food; his tongue was raw but moist; the eruption was pale, except on the legs, where it was still very pronounced; the pulse was feeble but regular, with 80 pulsations; and the respiration was 22. During the twelve hours following the last injection the patient passed eleven hundred cubic centimetres of urine, which was of a dark-red color, but it contained no albumin. The temperature during the day ranged about 100.2° F., and on the following day it became normal. For several days afterward nothing special was noted, and the infection terminated rapidly. M. Roger says that he has never seen such a rapid recovery follow in such a grave case of scarlatina.

During the course of the disease the toxicity of the urine was demonstrated from day to day by intravenous injections in rabbits, all of which died in from twenty to thirty-six minutes after the experiments were begun; the symptoms manifested were convulsions, salivation, and excessive contraction of the pupils. M. Roger thinks it would be interesting to study the toxicity of the urine in scarlatina; the investigations, he says, would be all the more important because, in the preceding observation, the evolution was absolutely anomalous. In this case defervescence was rapid instead of being progressive, as is usually the case, and the disease terminated suddenly. This, he thinks, is one of the best arguments in favor of the serum treatment.

It is not the author's intention to draw any conclusions from this case; he reports it simply to call attention to a method of treatment which may

perhaps be of service and certainly deserves to be studied.—N. Y. Med. Journal.

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MISCELLANEOUS.

ACUTE PULMONARY DISORDERS IN THE AGED.—In treating cases of pneumonia in persons of advanced age it is advised by some authors to rely chiefly upon feeding and stimulants, and to resort to the use of drugs as little as possible. Others again place great reliance upon internal medication. Both are correct from their standpoint. Cases undoubtedly get well under a proper system of alimentation and stimulation when required, while in others the judicious use of drugs not only contributes to the patients comfort, but favorably modifies the course of the disease. High fever, if left unchecked, rapidly consumes the tissues of the patient and saps his strength. Pain, restlessness and sleeplessness if unrelieved are equally injurious. The reduction of pyrexia in acute pulmonary disorders in the aged by cold baths is considered by many physicians as inconvenient, troublesome, and attended with the risk of shock and depression. On the other hand, cold sponging is of but little utility. Hence a drug which would reduce fever, relieve pain and subdue restlessness, and do all this without risk of injurious effect was long desired, and that this demand has been satisfied by the introduction of Phenacetine is evidenced by the great popularity of the remedy. In an article on acute pulmonary disorders in the aged, generally termed pneumonia, Dr. L. D. White (*Atlantic Medical Weekly*, August 15, 1896) clearly points out the value of this drug as a means of reducing elevated temperatures with its accompanying restlessness, and thus adds confirmatory testimony to the many favorable reports to be found in the literature.

FORMALDEHYDE AS DISINFECTANT.—According to K. Walter (*Zeitschr. f. Hygiene*) formalin (formaldehyde) in solution of 1 part per 10,000 prevents the further growth of spores and bacilli of cholera, diphtheria, staphylococcus pyog. aur., and typhus, while a 1 per cent. solution destroyed cultures of the same within an hour. A 3 per cent. solution is adapted for removing all sources of infection from the hands. However, it remains to be seen if a solution of this strength affects the epidermis or not. A 1 per cent. solution of formaldehyde effectually disinfects and renders feces odorless, an 8 to 10 per cent. solution destroying all spores in ten minutes. It yields excellent results as a preserving agent for organic specimens.

NEW TEST FOR PEPTONE IN PRESENCE OF ALBUMEN IN URINE.—A. Jaworski (har. Ztschr. Russ.) recommends the following: The sample of urine is treated with an excess of sodium bicarbonate, filtered, evaporated to one-third its volume, shaken with amyl alcohol and neutralized with citric acid. To 4 cc. of the sample thus prepared, a drop of an aqueous solution of ammonium molybdate (1 to 40) containing 10 per cent. of citric acid is added. If albumen or peptones are present a turbidity ensues; the mixture is then heated and quickly filtered, the peptones are found in the filtrate, separating on cooling, while the albumin precipitate remains on the filter.

RESUSCITATION OF THE APPARENTLY DROWNED.—Dr. W. H. Miller reports in the *Health Journal* the case of a boy who was resuscitated from apparent death by drowning after having lain in a cold room for an hour after rescue from the water. Efforts at reviving him had been made without result. When the doctor reached him he seized him by the legs and suspended him head down, and at the same time introduced his fingers into the mouth, pressing the tongue forwards and downwards, tickling the throat with the finger and removing water, mucous, etc., from the entrance to the windpipe. The patient was then suspended for eight seconds, then having him quickly laid upon his back, the operator pressed the air out of the lungs, by pressure on the breastbone for two seconds; again he was quickly suspended for seven seconds, and the pressure repeated, dropping one second to four seconds. At the fourth suspension a slight pressure of the jaw was felt on the operator's finger; upon the next suspension a pressure was felt and the faintest whisper heard, at the next suspension a firm pressure and a loud cry. The treatment was completed by the administration of stimulants, rubbing, application of hot bricks and blankets, and finally putting to bed to sleep. The happy result in this case shows the great importance of continuing efforts at resuscitation under even the most discouraging circumstances.—*Druggists' Circular*.

DEFECTIVE BREASTS A SIGN OF DEGENERACY.—Heger appeals to young men on behalf of posterity to select women with well developed breasts for their wives, and suggests that the young women can retaliate by refusing to marry a man unless he can produce a record of having been a "breast baby." He quotes statistics to prove that inability to nurse a child is a sign of degeneracy, and produces degeneracy. We note among the facts he cites that in a certain district which supplies large numbers of wet nurses to the city, the percentage of men physically incapable of military service amounts to 30 per cent., while in the neighboring districts where the mothers remain at home with their families, it is only 18 per cent. He

also remarks upon the surprising numbers of deformed nipples encountered in the hospitals. Fehling mentions "hollow nipples" as occurring in 6.7 per cent. of his obstetric cases. Hegar warns mothers not to allow the clothing to constrict the growing breasts of their daughters, and urges general hygiene as the best method to develop them.—*Deutsch Med. Woch.*, August 20.

NORMAL SALT SOLUTION.—Dr. Warren B. Outten, professor of surgery in Beaumont Medical College, St. Louis, maintains (quotes the *Amer. Journal Surg. and Gynec.*) that normal salt solution acts with vigor and success in the treatment of a suppurating wound, and unless there is a great amount of pus, dressings can be left on for eight days without change. He further declares: "It can be demonstrated that a wound treated by the corrosive sublimate solutions and other antiseptics often-times remains painful, but when a change is made by using the saline solution, ease is manifested at once. Again, the granulations show less tendency to exuberance and inflammation, and present a regular, uniform and healthy looking surface. We certainly believe that the withdrawal of irritating antiseptics in the treatment of granulating wounds and their replacement by mild, unirritating aseptic solutions, will be a positive and common-sense advancement in the treatment of suppurating wounds and superficial inflammation."

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REVIEWS.

The Medical News Visiting List, 1897. Philadelphia, Lea Brothers & Co., 1896.

The various little visiting lists, which have no special claim for recognition, all useful in one or more ways, have no better type of their class than the one published by the above firm. In a few pages are contained signs of dentition, how to find the day of confinement, comparative scales showing at a glance the exact equivalent of ordinary weights and measures in use in the metric system, and vice versa, the examination of the urine, important incompatibles, artificial respiration, a table of eruptive fevers, poisons and antidotes, tables of doses, therapeutic reminders, and ligation of arteries; a thumb index in which provision is made for obstetric engagements, vaccinations, death register, addresses of patients, addresses of nurses, a cash account, in addition to the general memoranda and daily record, completes this little compact and useful aid to a physician's pocketbook.

The Practice of Medicine; a text book for practitioners and students, with special reference to diagnosis and treatment. By James Tyson, M.D., Professor of Clinical Medicine in the University of Pennsylvania, and Physician to the Hospital of the University, etc., etc. Illustrated; Philadelphia, P. Blakeston Son & Co., 1012 Walnut street, 1896.

This volume of over a thousand pages presents the subject of the practice of medicine somewhat differently from the ordinary text books. The author at the outset makes no apology for the appearance of the work and needs none. He considers his subject under 15 sections, and the fact that the work is entirely up to date in pathology and bacteriology is nowhere better demonstrated than in the very first section entitled "Infectious Diseases." Of course, we shall not be able to go into detail regarding each of the articles, but to illustrate our meaning, take typhoid fever, where, besides going very fully into the treatment in general, he also gives especial attention to that method of treatment which of late years has made such a material decrease in the hospital mortality of this disease.—Brandt method. Not only so, but he gives a brief review of the reports made of the treatment of typhoid fever by cultures of serum. He dismisses the antiseptic treatment by saying that "it has not a truly rational basis, while the extravagant claims of its advocates discourage their results." Again, take the subject of cholera, the definition, history, etiology, morbid anatomy, symptoms, diagnosis, and prognosis take up nine pages; the treatment, in which he considers prophylaxis, special directions to nurses, the examination for cholera bacillus, and so on, occupies eight pages. The subject of leprosy is briefly considered and the treatment of it practically dismissed in a dozen lines. The serum treatment finds no place. In the treatment of acute pleurisy the author warmly commends local blood-letting as the best measure, and next to this a blister. Regarding tapping, the author says that sudden death has more frequently occurred in cases of full pleura without operation than with it. He thinks that every physician ought to be prepared to do the operation without the assistance of the surgeon, and yet has no directions as to the method of its performance; without a single caution in regard to the sterilization of the surfaces, the instrument, the support of the chest by a band, and many other little details which are quite necessary to the most successful performance of even this simple operation, seem to us to entirely negate such an operation. The caution in regard to the needle being introduced close to the upper margin of the rib amounts to very little if the needle be introduced perpendicularly midway between the two borders, and, in any event, the situation of the intercostal arteries makes it no easy matter to puncture them during this operation. But the work is unquestionably as a whole one of great usefulness to the modern physician, and we regret that our space forbids taking up more of it in detail. At least to the practising physician, the proportionately large amount of space given to the subject of treatment will not be unappreciated.

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SEMI-CENTENNIAL OF ANAESTHESIA.

The exercises in commemoration of the fiftieth anniversary of the first public demonstration of ether for anæsthesia, held at the Massachusetts General Hospital, Boston, on October 16, 1896, were worthy of that most important event in surgical history. In the very amphitheatre in which ether had been administered by Dr. W. S. G. Morton, the invited guests were received. A part of the paraphernalia used at the time were on exhibition. Among the invited guests were, Gov. Wolcott, President Eliot, of Harvard University; Bishop Lawrence, Mrs. W. T. G. Morton, her son, Dr. William J. Morton, and her daughter, Mrs. Frederick Young, Lord and Lady Playfair, Dr. and Mrs. John Ashhurst, Dr. and Mrs. S. Weir Mitchell, Dr. W. Osler, Dr. W. H. Welch, Dr. L. M. Tiffany, Dr. A. Jacobi, Dr. Charles McBurney, Dr. W. L. Richardson, and many others whose names have already become familiar as workers in surgery. The grandson of the surgeon who did the first operation with ether, Dr. John Collins Warren, opened the exercises. Dr. Robert T. Davis, one of the few surviving witnesses of the first public use of ether, recounted the details connected with the event. Dr. John Ashhurst read a paper entitled, "Surgery before the days of Anæsthesia." Dr. J. P. Reynolds of Harvard University read a paper entitled, "The relation of Anæsthesia to Obstetrics." Dr. W. H. Welch, of Johns Hopkins University, read a paper entitled, "The influence of Anæsthesia upon Medical Science," and Dr. Chas. McBurney, of New York, read a paper entitled, "The Surgery of the Future." We regret that we cannot take up each paper and give a brief summary, but the importance of the event makes imperative at least this short resume of the celebration. A by no means important and significant fact brought out by this demonstration, was that the credit for

the discovery of anæsthesia was fastened upon the man to whom it belongs, and this is none the less true because it may be shown that some one else at some unknown place and unknown time did the same thing. The question of Morton's failure to procure patents on the commercial bearings of the case in the early history of ether, does not in the least detract from the value of the discovery or from the subsequent magnanimity which characterized its public demonstration. Of the relative values of ether and chloroform, this is not the time to speak, but if we had no anæsthetic but ether, we would still be thoroughly equipped for all important surgical procedures.

MEDICAL NEWS AND NOTES.

ALVARENGA PRIZE.

PHILADELPHIA, October 20, 1896.

The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income of one year of the bequest of the late Senor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1897, provided that an essay deemed by the Committee on Award to be worthy of the Prize shall have been offered.

Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the secretary of the college on or before May 1, 1897. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award. The Alvarenga Prize for 1896 was not awarded.

Thomas R. Neilson, M.D., Secretary.

Dr. F. S. Cregs has been appointed Professor of Diseases of the Nervous System in the Medical Department of the University of Buffalo.

Dr. Chas. Emmons has been appointed Professor of Diseases of the Nervous System in the Medical Department of the Howard University, Washington, D. C.

Dr. D. I. Wolfsten has been appointed Lecturer on Pathological Anatomy in the Medical College of Ohio, Cincinnati, Ohio.

